Sams

*First Edition*
*First Printing—October 1981*

**VDP-1**

# Videodisc Player Service Data

*by the Howard W. Sams ENGINEERING STAFF*

## MAGNAVOX VH8000

For Cumulative listings of Video Service Data, See last page.

# Sams

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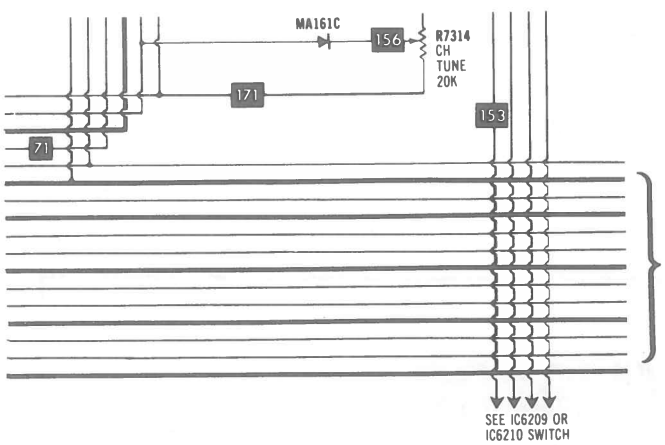
Library of Congress Catalog Card
Number 78-51397

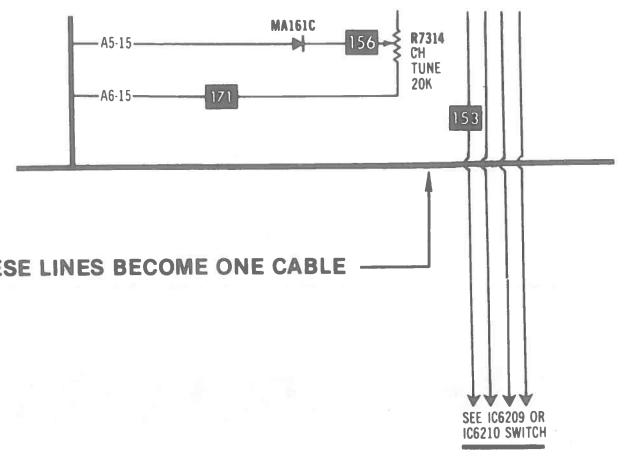
## Cabling Concept Now Included in Schematics

**EASY-TO-FOLLOW CABLING** — The cabling system is used in all digital circuitry to greatly simplify the schematics and improve usability.

### PREVIOUS CIRCUITRY




### TYPICAL CABLING CIRCUITRY



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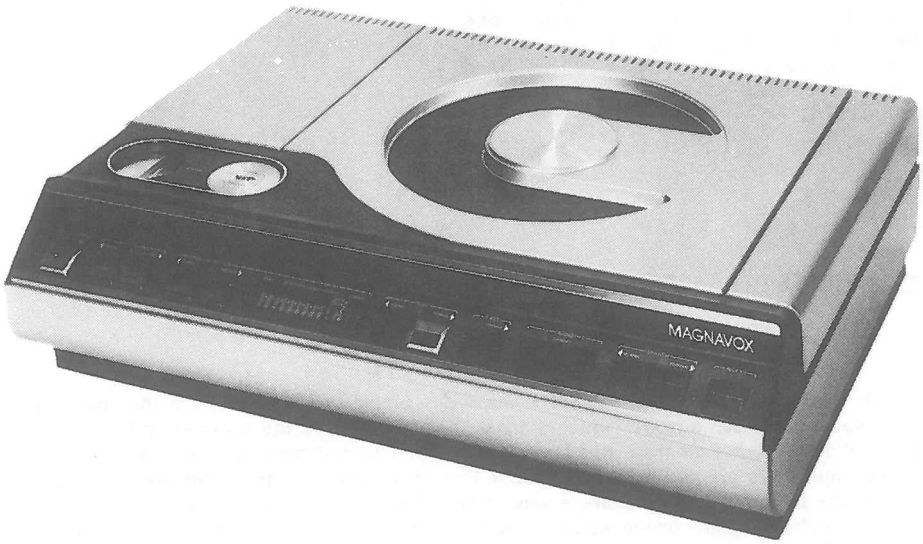
(317) 298-5400

# PHOTOFACT® with CIRCUITRACE®

For Supplier Address See PHOTOFACT Index

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# DISASSEMBLY INSTRUCTIONS

CABINET REMOVAL

Place video disc on its top. Remove six screws holding cabinet bottom. Lift cabinet bottom off.

Place video disc in upright position. To remove right and left side panels, remove one screw from the rear of each side panel. Slide panels back and remove. To remove lid, open lid and remove two screws one on each side at hinges and remove lid.

# SAFETY PRECAUTIONS

## SAFETY NOTE

**The laser used in this instrument produces two different types of light. The glow from the laser body is called collateral radiation or plasma glow. The laser output (emitted from the end next to the optic assembly) is called coherent light or laser radiation. The collateral radiation from this laser is equivelent to ordinary light in as much as it is light composed of many different wavelengths. We are required by Federal Law, however, to shield this glow. Coherent light differs from ordinary light only in the fact that it is of a single wavelength. This fact allows coherent light to be focused more sharply than ordinary light. The coherent light produced by a laser is intense and like any intense light source can cause permanent eye injury or skin burns if direct exposure to the beam is encountered.**

**This unit is designed to permit service without the necessity of direct laser beam exposure. The service technician should exercise the precaution necessary to avoid any direct exposure to the laser beam.**

## SPECIFICATIONS

| | |
|---|---|
| Line Voltage | 120 VAC |
| Line Frequency | 60 Hz |
| Power Consumption (Maximum) | 80 Watts |
| Fuse | 1.5 Amp Slow Blow |

**RF Output**

| | |
|---|---|
| TV System | N.T.S.C. |
| Output Socket | Phono Type* |
| Output Level (Into 75 ohms) | 1.25mV RMS |
| Output Frequency | VHF Channel 3 or 4 |

**Video Output**

| | |
|---|---|
| Output Socket | BNC Type |
| Output Level (Into 75 ohm) | 1V p-p |
| Polarity of Video Signal | Positive |
| DC Amplitude of Sync Level | 2.7V |
| Frequency Range (-6dB) | 4.2 MHz |

**Audio Output**

| | |
|---|---|
| Output Sockets | Phono Type |
| Output Level (Max. Input Impedance 1.5K ohm) | 220mVRMS |
| Frequency Range (-3dB) | 40 Hz - 20 KHz |
| Number of Channels | 2 |
| Channel Crosstalk (1 KHz at 100% mod.) | 55dB |
| Distortion (1 KHz at 100% mod.) | 2% |

| | |
|---|---|
| Weight | 35.3 lbs. |
| Dimensions | 22" L x 16" D x 6" H |
| Playing Time, 12 inch Disc | |
| A. Standard Disc | 30 min./side |
| B. Extended Play Disc | 60 min./side |
| Motor Speed | |
| A. Standard Disc | 1800 r.p.m. |
| B. Extended Play Disc | 1800 - 600 r.p.m. |

*Connections to the television antenna terminals are made through a cable and an antenna switch box, which are supplied with the unit. The output of the antenna switch box is a 300 ohm antenna cable.

Courtesy of the Manufacturer

# ELECTRICAL ALIGNMENT/ADJUSTMENTS

LASER SUPPLY CHECK (-2000V)

Turn power off. Disconnect plug J5 (Power Supply Board). Connect a jumper from TP4 (Power Supply Board) to ground. Connect a meter from J5, Pin 1. Close lid and turn unit On. Check for -2000 volt ±500V DC.

LASER CURRENT ADJUSTMENT

Connect a DC meter to TP5 (Power Supply Board) close lid and turn unit On. Adjust R2 (Power Supply Board) for 5 volts ±0.1 volts.

FM AGC ADJUSTMENT

Insert a Disc and turn unit On. Input of scope to Pin 15 of U1628 (RF Processor). Adjust RF AGC Control R3002 on U1628 (RF Processor) for 1V p-p.

VIDEO I LEVEL ADJUSTMENT

Insert a Disc and turn unit On. Input of scope to Pin 1 of U1632 (Video Processor). Adjust R3013 on U1630 (Video Demodulator I) for .26 volts ±0.01 volt p-p. See Figure 1.

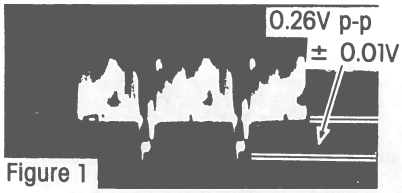


Figure 1

VIDEO II LEVEL ADJUSTMENT

Insert a Disc and turn unit On. Input of channel 1 of a dual trace scope to Pin 4 of U1631 (Video Demodulator II) and channel 2 to Pin 10 of U1631 (Video Demodulator II). Adjust R3013 on U1631 (Video Demodulator II) for equal amplitude of channel 1 and 2. See Figure 2.

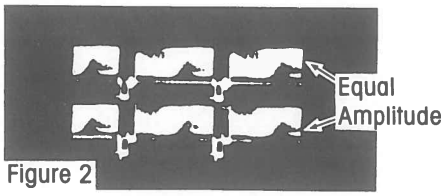


Figure 2

BLACK LEVEL CLAMP ADJUSTMENT

Insert a Disc and turn unit On. Input of DC meter to Pin 1 of U1632 (Video Processor). Confirm pictures numbers are off. Search to end of Disc. While unit is returning to start of Disc, adjust R3029 on U1632 (Video Processor) for 3.0 volts ±0.05 volts.

AUTOMATIC DISC CORRECTION ADJUSTMENT

Insert a standard Disc and turn unit On. Select a Still picture near start of Disc. Turn R3004 on U1041 (Color Det.) fully clockwise. Turn R3004 counterclockwise until snow just disappears.

DROPOUT ADJUSTMENT

Insert a Standard Disc and turn unit On. Turn R3022 on U1629 (Dropout Detector) fully counterclockwise. Find a dropout at the beginning of Disc (No. 100 or less). Adjust R3022 until dropout disappears. NOTE: A two line dropout will not disappear, a one line dropout will disappear.

FOCUS GAIN ADJUSTMENT

Insert a Disc and turn unit On. Input of channel 1 of a dual trace to Pin 1 of U1643 (Focus Drive) and channel 2 to Pin 2 of U1643 (Focus Drive). Inject a 1.5kHz 8V p-p sine wave to Pin 2 of U1643 (Focus Drive). (NOTE: Do not exceed 8 V p-p). Select X-Y mode of scope. Adjust R3010 on U1643 (Focus Drive) so that the right and left sides of the waveform are of equal level. See Figure 3.

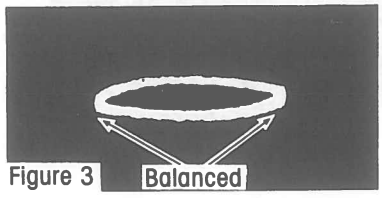


Figure 3

## RADIAL GAIN ADJUSTMENT

Insert a Disc and turn unit On. Search out to number 20,000 ±1000. Input of channel 1 of a dual trace scope to Pin 1 of U1704 (Trick Logic), and channel 2 to Pin 14 of U1644 (Radial Drive). Inject a 4kHz 8V p-p sine wave to Pin 14 of U1644 (Radial Drive) (NOTE: Do not exceed 8V p-p). Select X-Y mode of scope. Adjust R3002 on U1644 (Radial Drive) so that the right and left sides of the waveform are of equal level. See Figure 4.

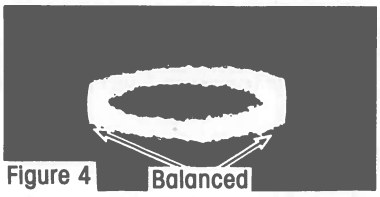


Figure 4

## RADIAL LIMIT ADJUSTMENT

Insert a Standard Disc and turn unit On. Search out to near end of Disc. Turn R3026 on U1644 (Radial Drive) fully counterclockwise. Search reverse and adjust R3026 to a point where the search rate just slows.

## JUMP PULSE ADJUSTMENT

Insert a Standard Disc and turn unit On. Input of scope to Pin 1 of U1704 (Trick Logic). External trigger from Pin 1 of U1632 (Video Processor). Set horizontal time base to 1 mSec and X5. Adjust R3025 on U1704 (Trick Logic) for MINIMUM jump pulse. See Figure 5.

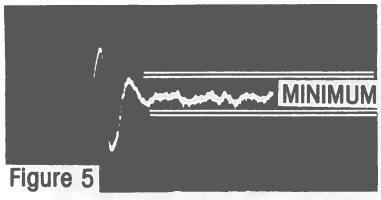


Figure 5

## MOTOR PHASE (SPEED) ADJUSTMENT

Insert a Disc and turn unit On. Input of scope to Pin 11 of U1035 (Mirror Phase Detector). Adjust R3028 on U1037 (Motor Drive) so that the same level is between 50% and 60%. See Figure 6.

NOTE: There is a very slow response time as adjustment is made.

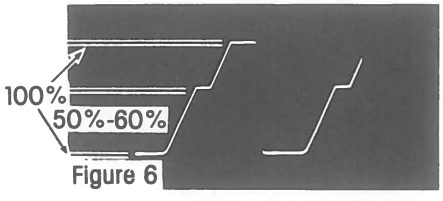


Figure 6

## MOTOR BRIDGE BALANCE ADJUSTMENT

Insert a Disc and turn unit On. Input of scope to Pin 14 of U1037 (Motor Drive). Externally trigger from Pin 11 of U1035 (Mirror Phase Detector). Connect a short jumper between Pins 7 and 8 of U1038 (Tangential Mirror Drive). Adjust R3021 on U1037 (Motor Drive) for MINIMUM ripple.

## TANGENTIAL GAIN ADJUSTMENT

Insert a Standard Disc and turn unit On. Select a picture with lots of red at 12,000 or less. Turn R3038 on U1038 (Tangential Drive) fully clockwise and then 1/3 counterclockwise. Turn R3012 on U1038 (Tangential Drive) fully clockwise and then counterclockwise for MINIMUM color banding in red areas.

## GRATING ADJUSTMENT

NOTE: The Grating is factory set and should not require adjustment unless a new Slide Assembly is installed.

Clean Objective Lens with a cotton swab and isopropyl alcohol.

Insert a Disc and turn unit On. Input of scope to Pin 1 of U1704 (Trick Logic). Search out to picture 20,000 ±1000. Select Still Frame mode. Adjust Grating Adjust Screw (located on Slide Assembly) for maximum jump pulses. See Figure 7.

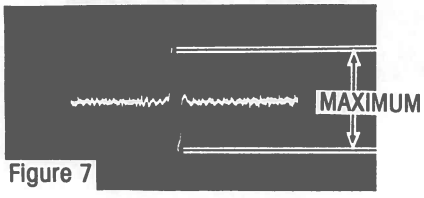
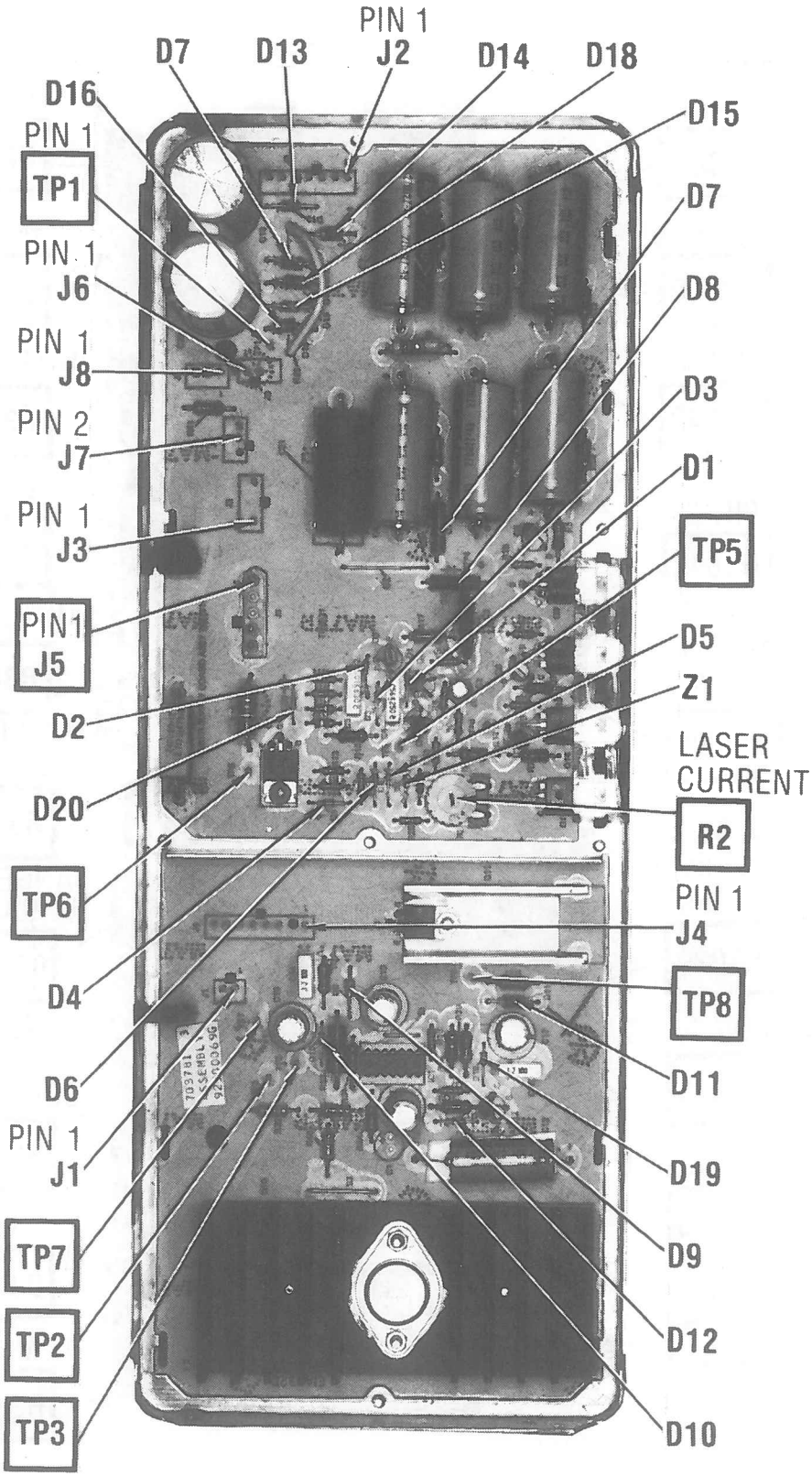
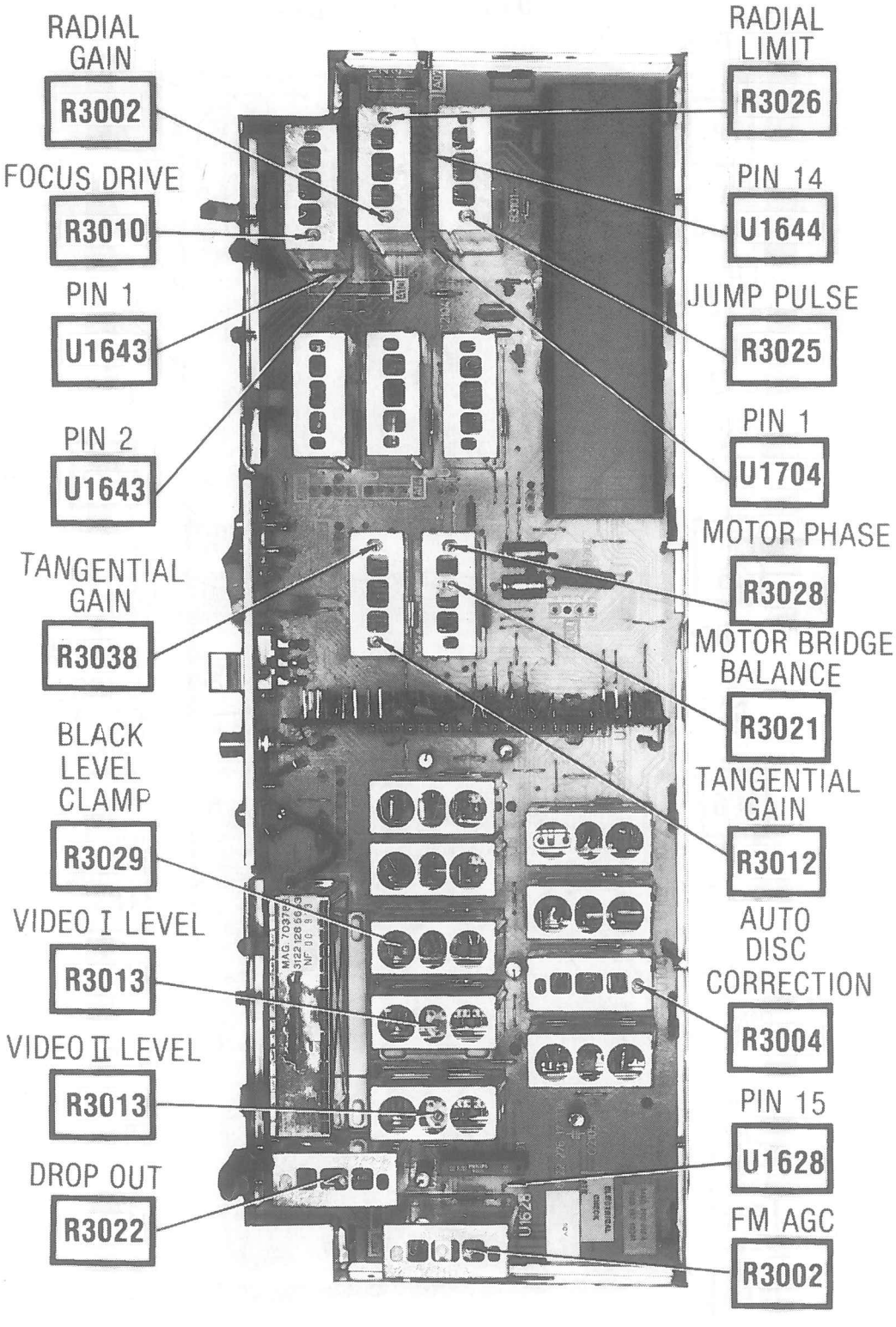


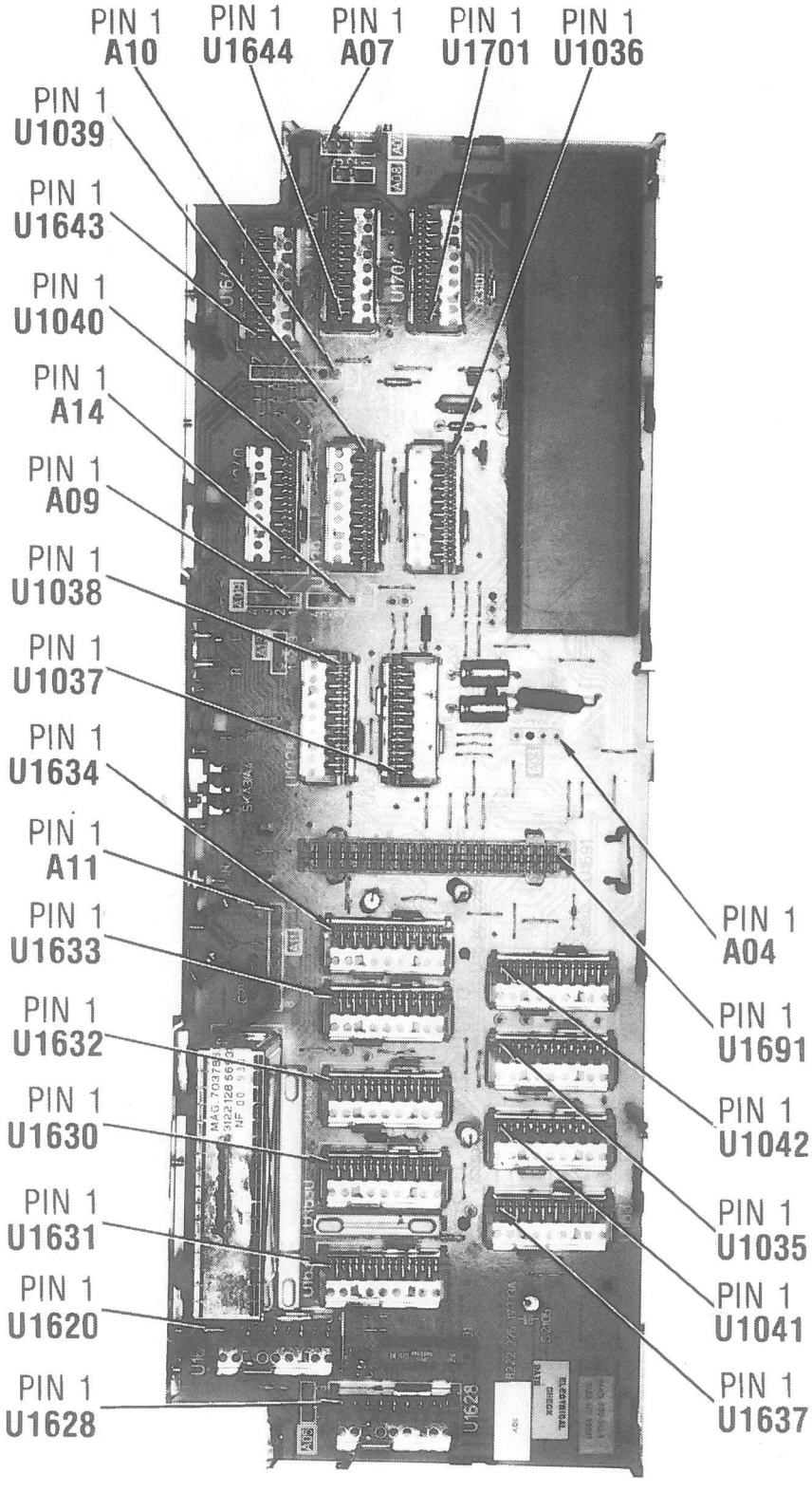
Figure 7



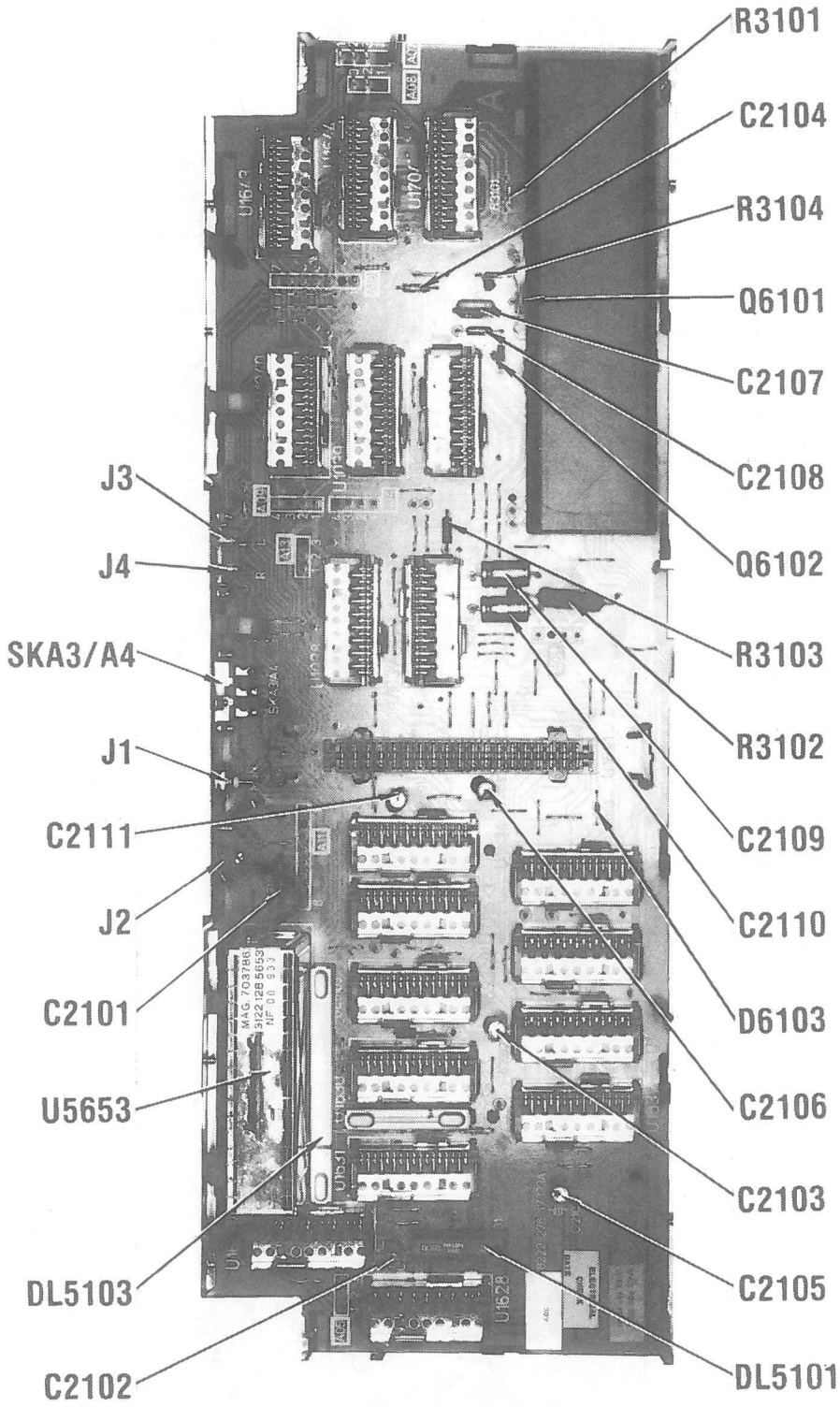

POWER SUPPLY BOARD




**VIDEO/SERVO BOARD**




**VIDEO/SERVO BOARD**

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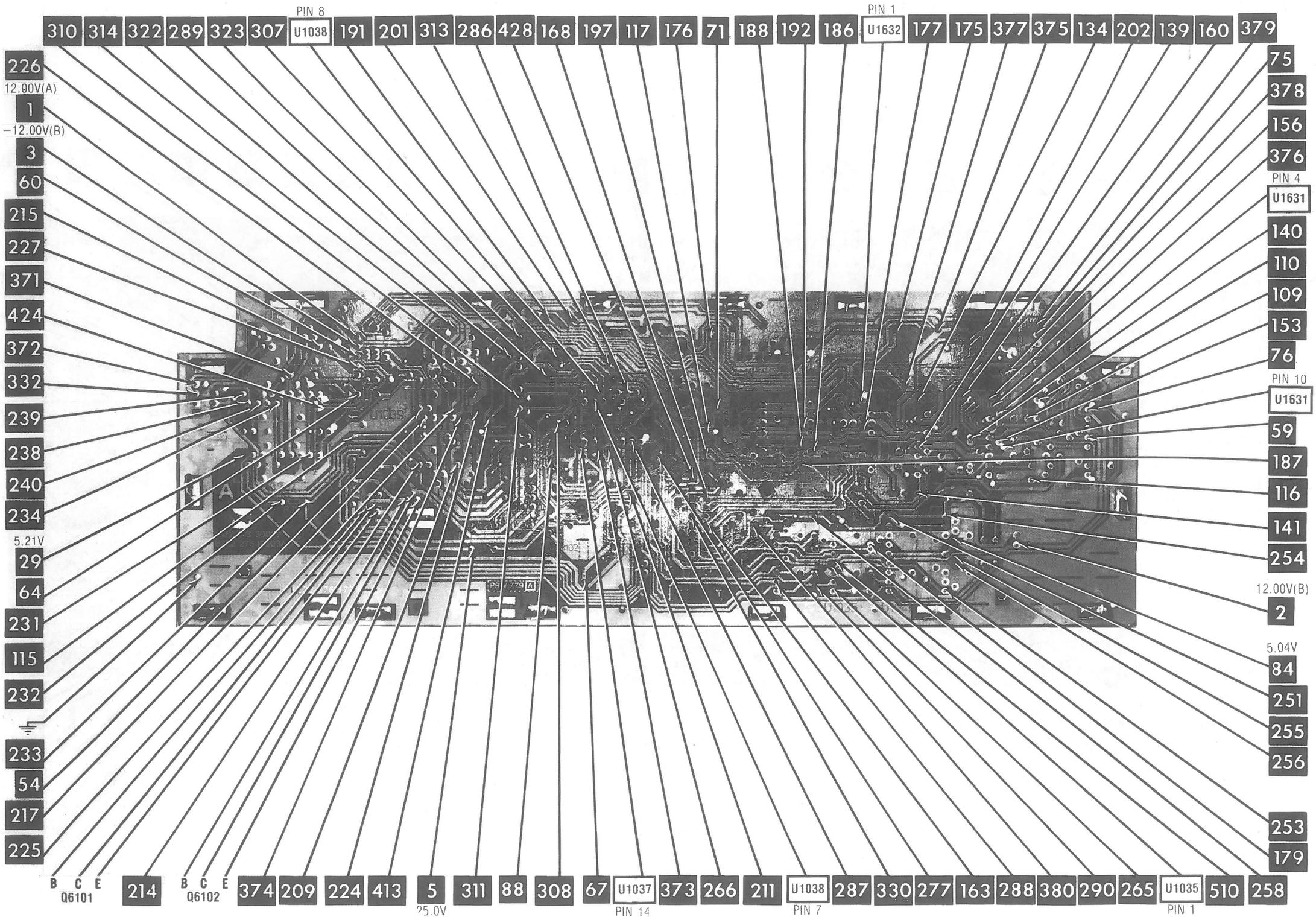


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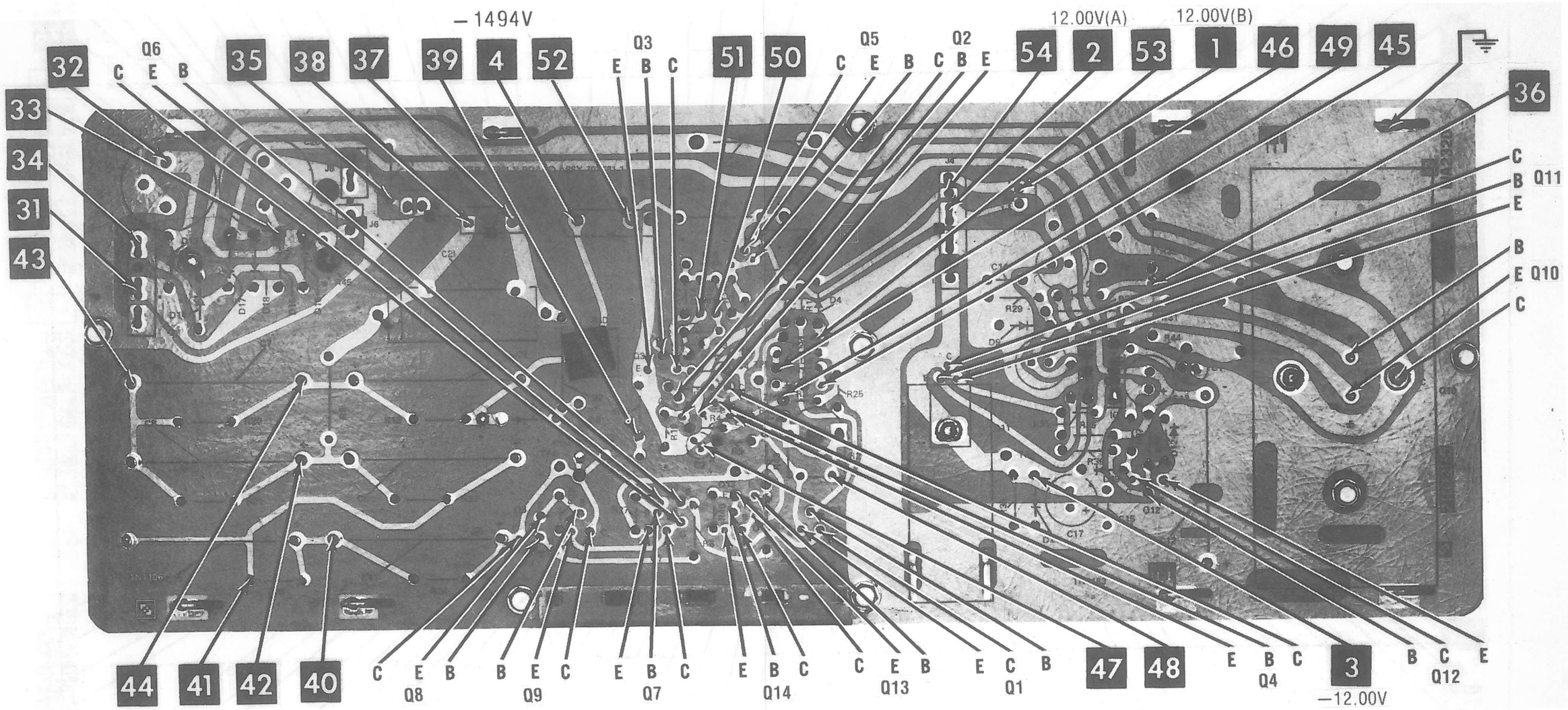


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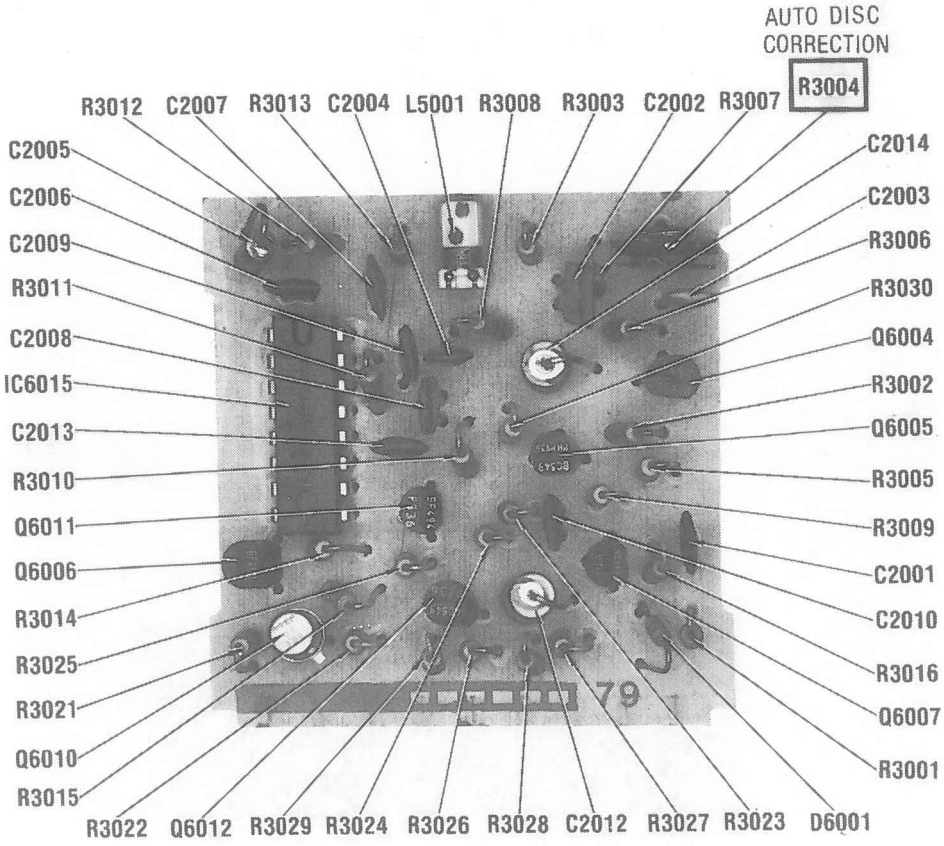
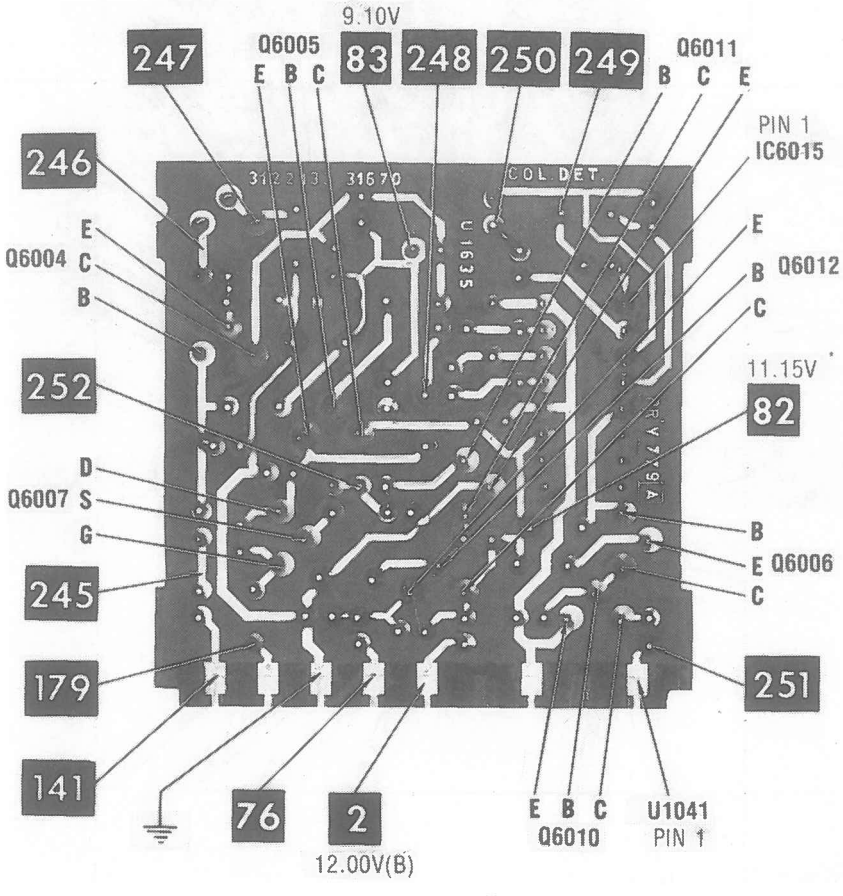
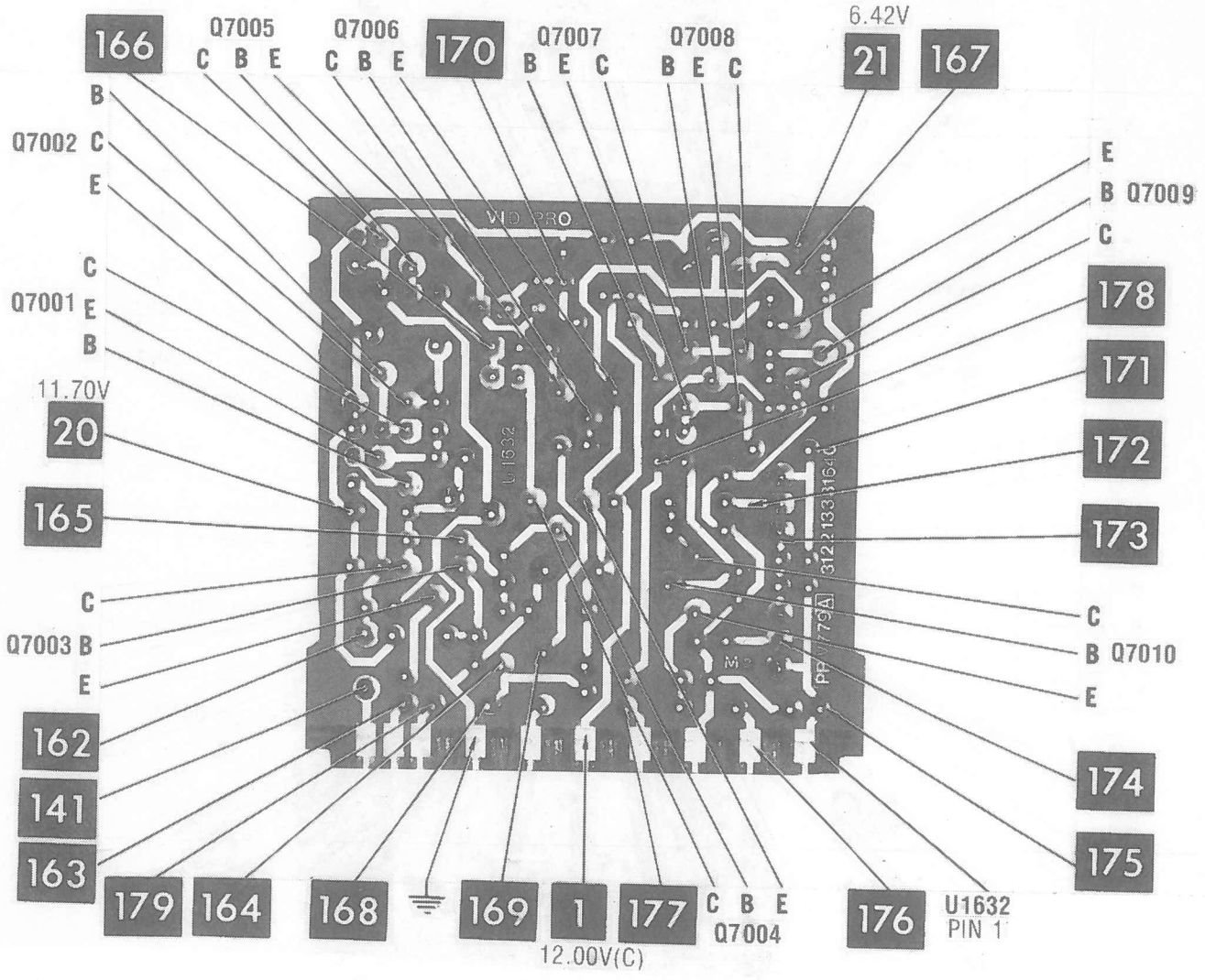
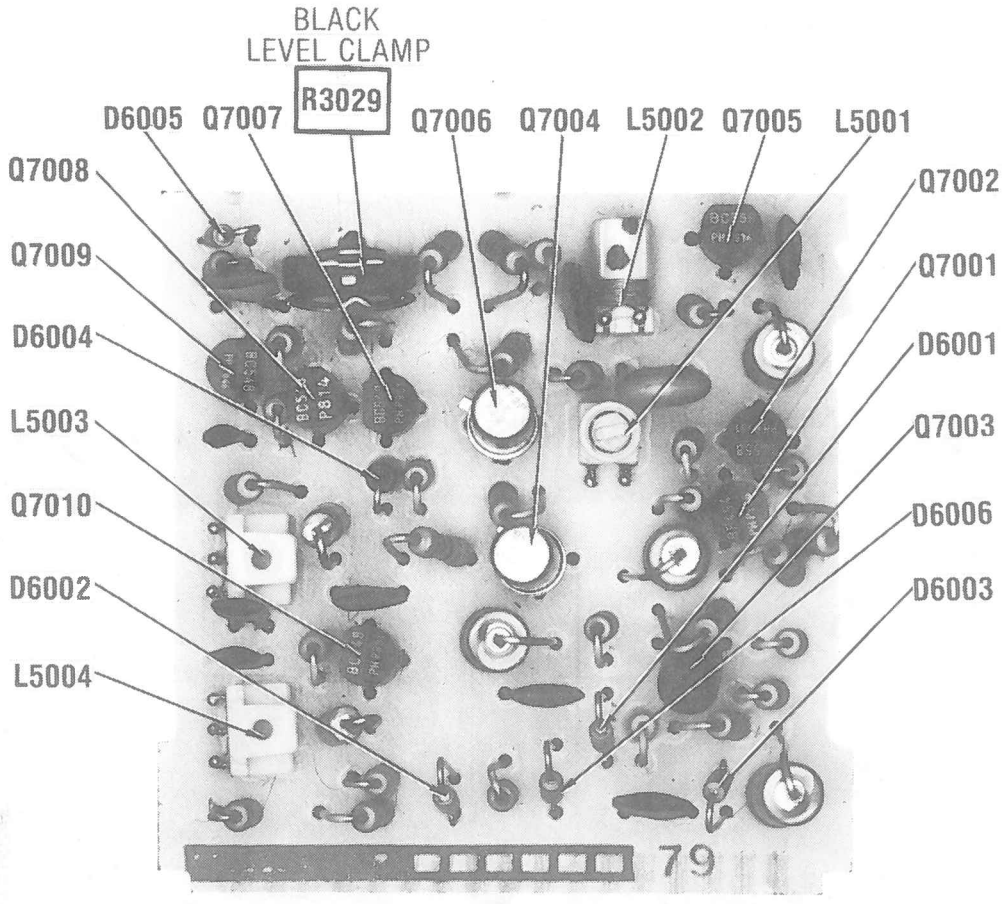


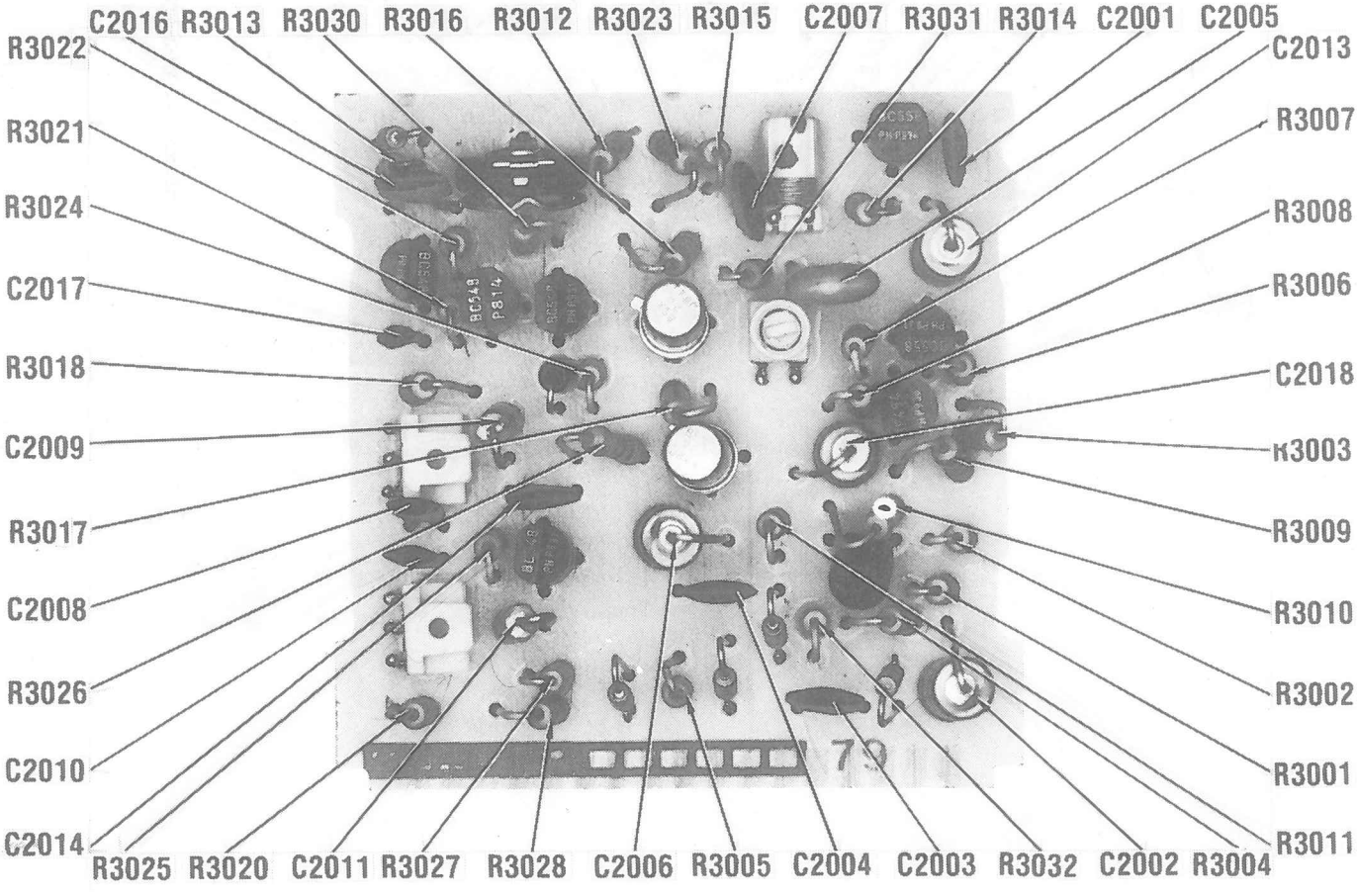




## (U1041) COLOR DETECTOR MODULE




## (U1632) VIDEO PROCESSOR MODULE

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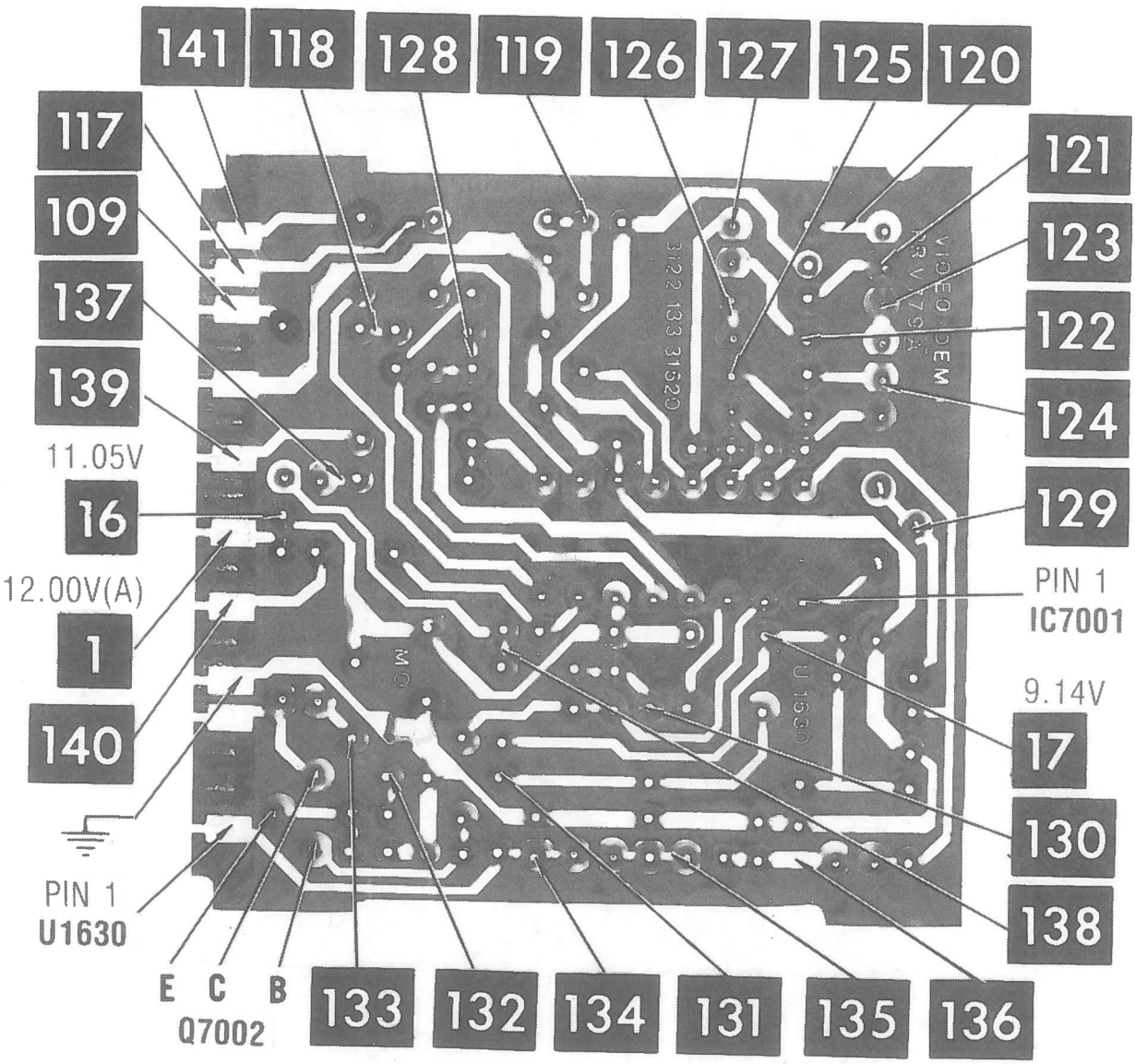
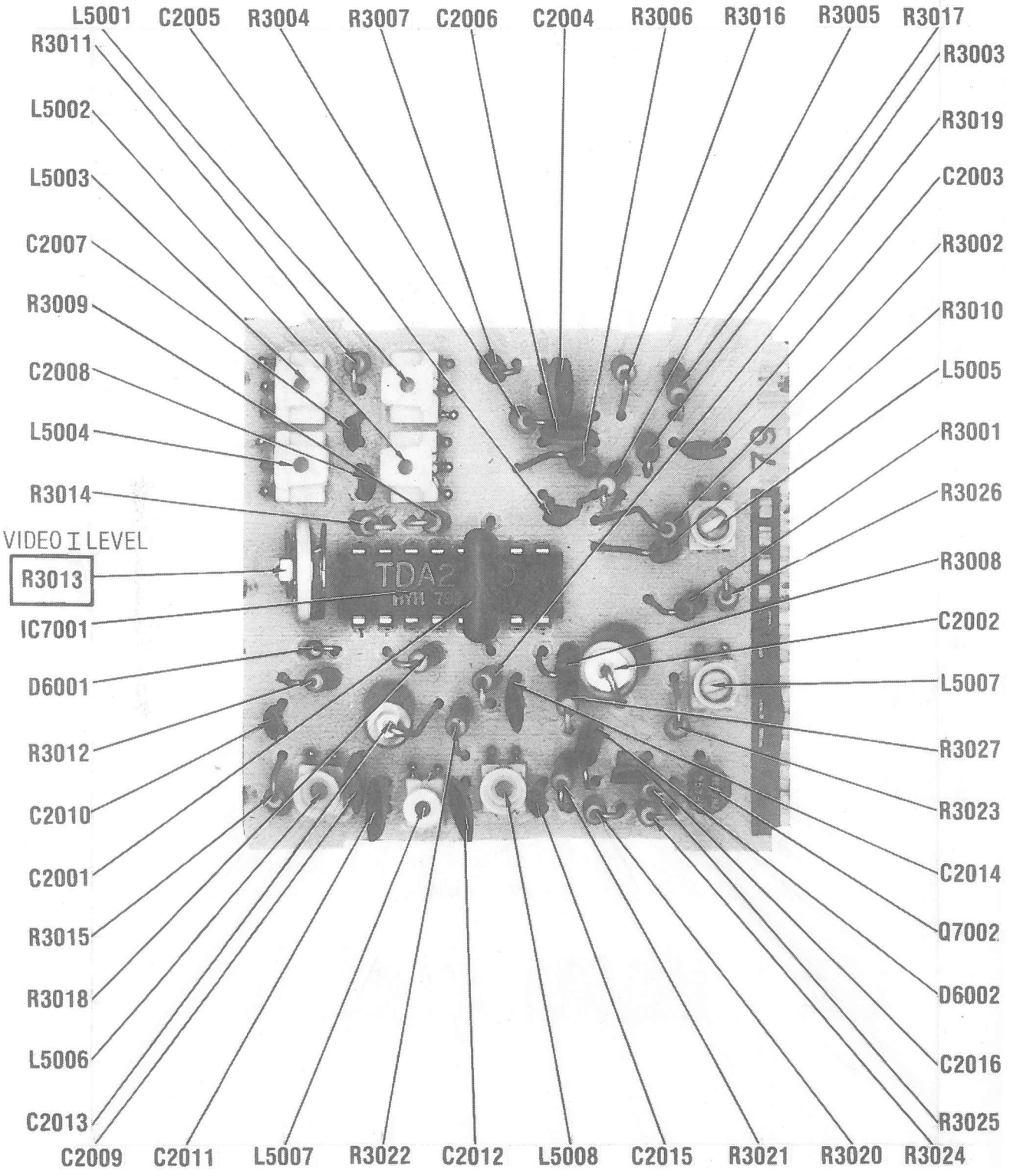



(U1630) VIDEO DEMODULATOR I MODULE

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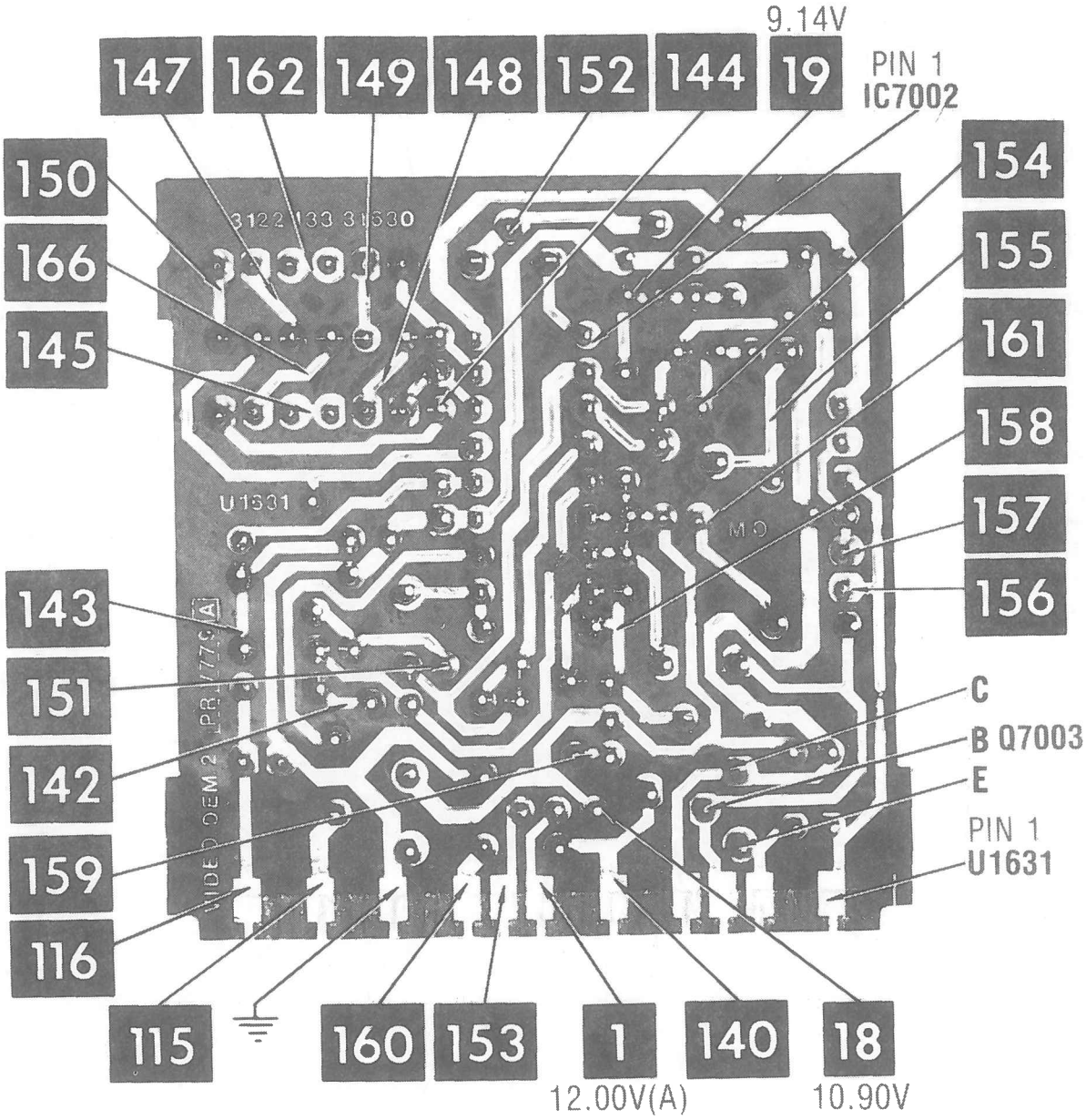
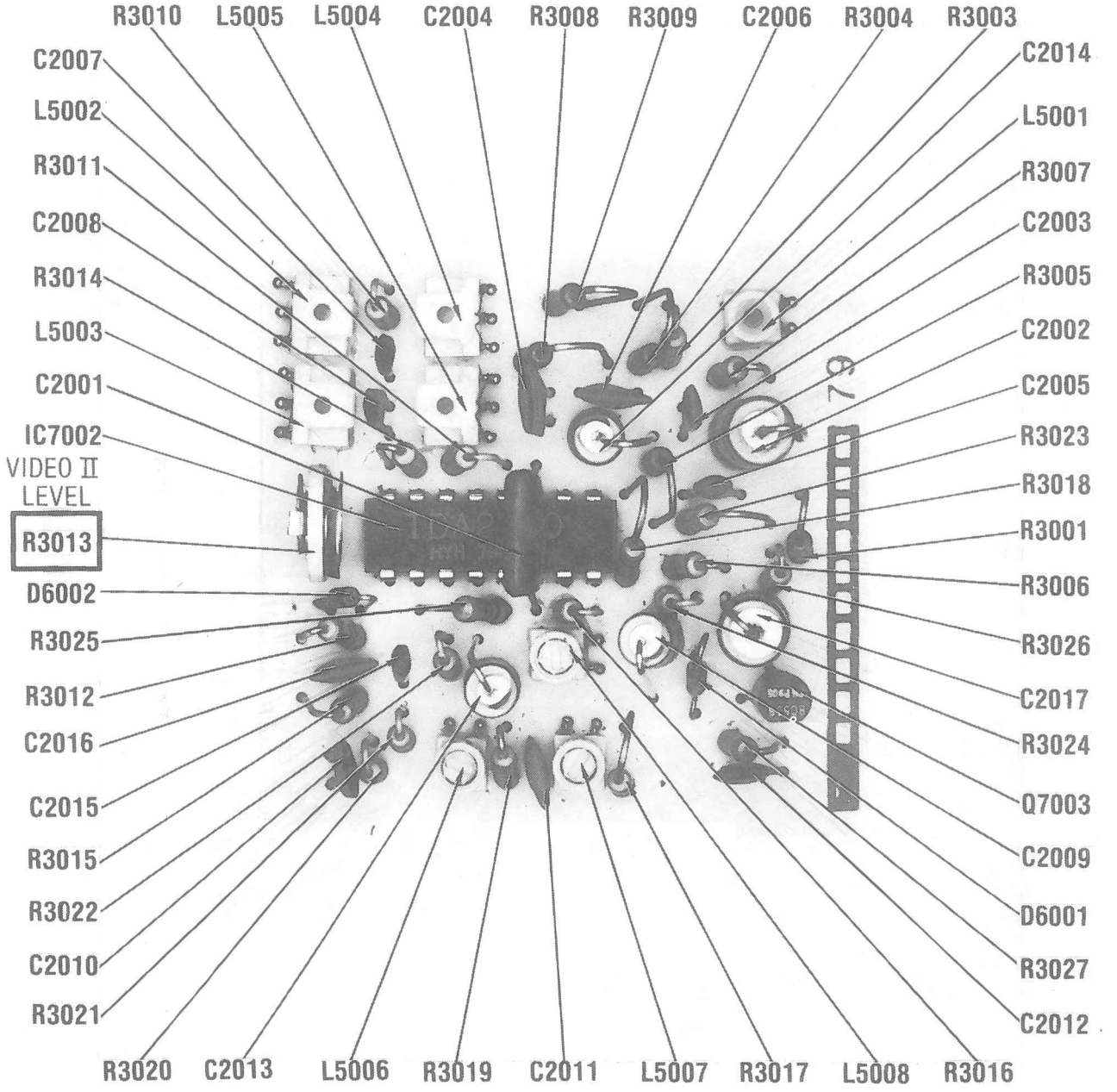
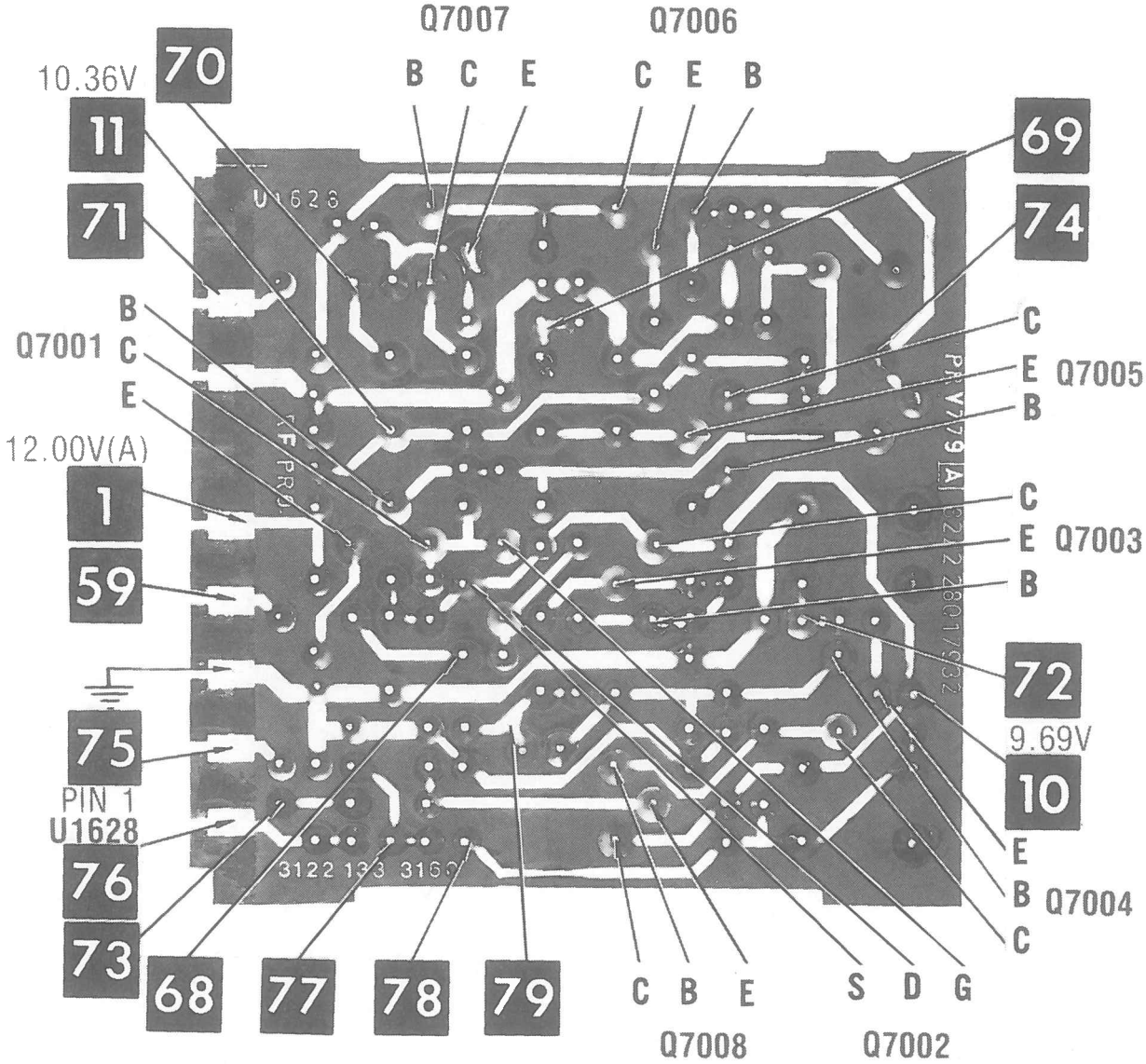


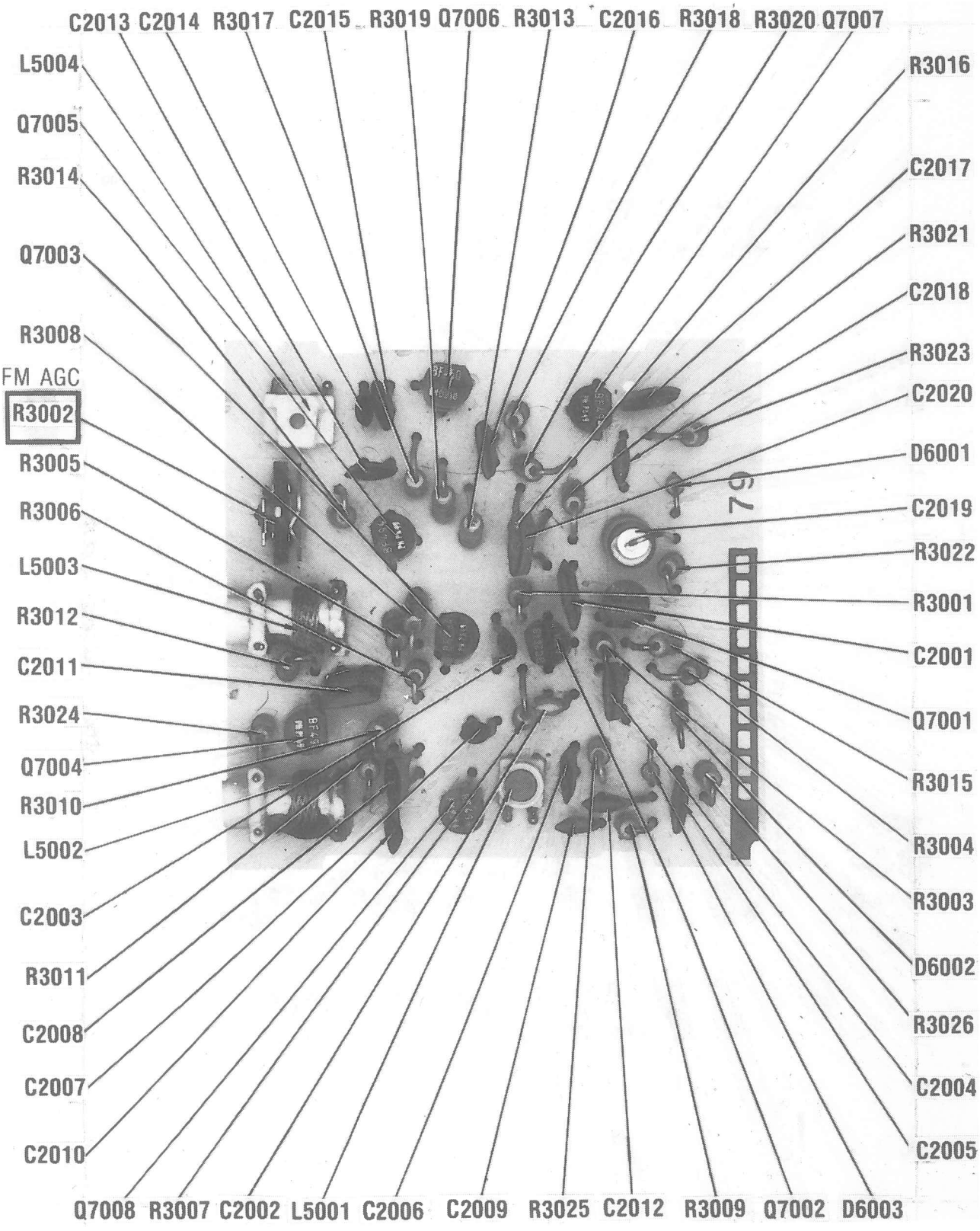

(U1631) VIDEO DEMODULATOR II MODULE



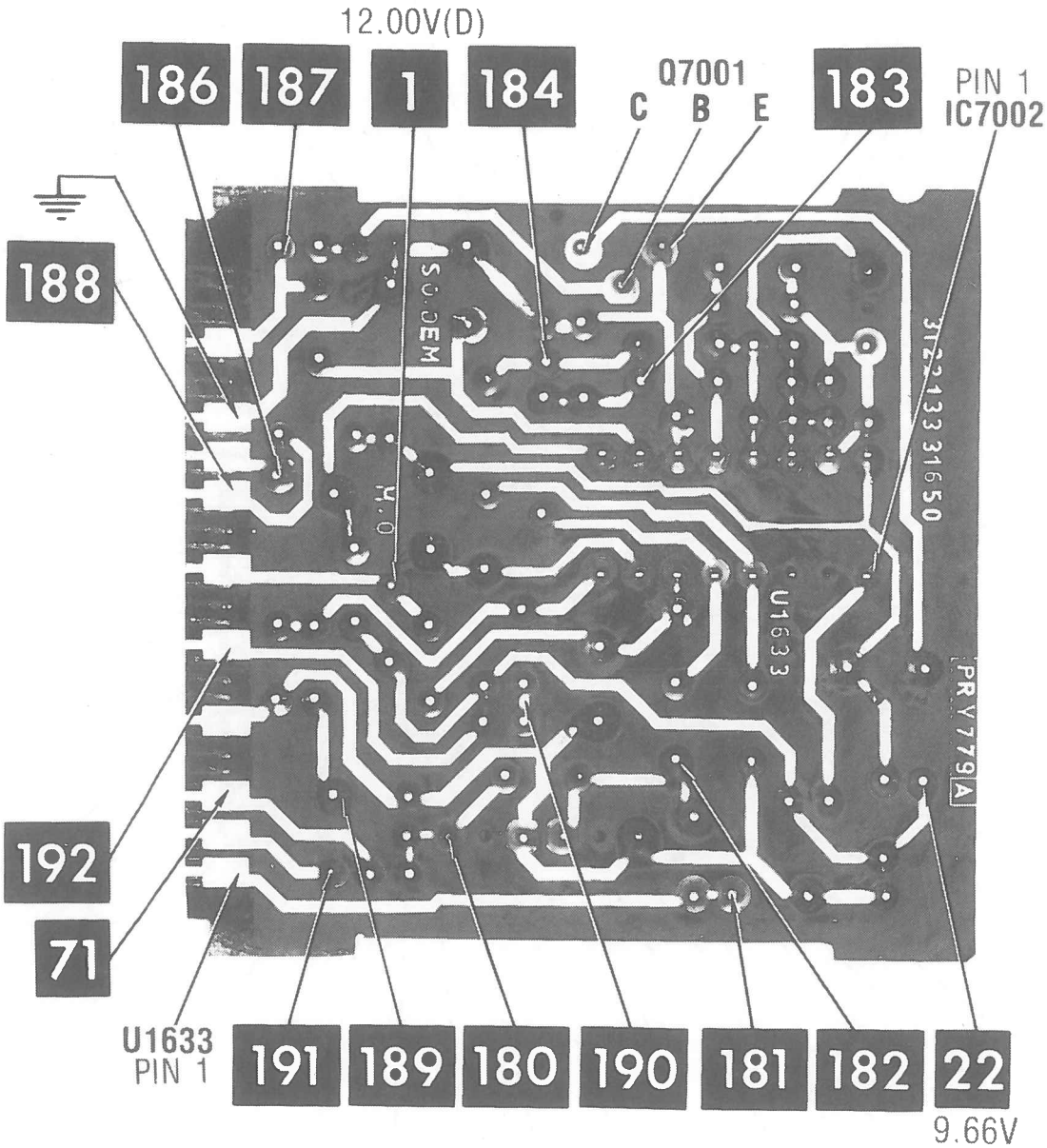

(U1631) VIDEO DEMODULATOR II MODULE



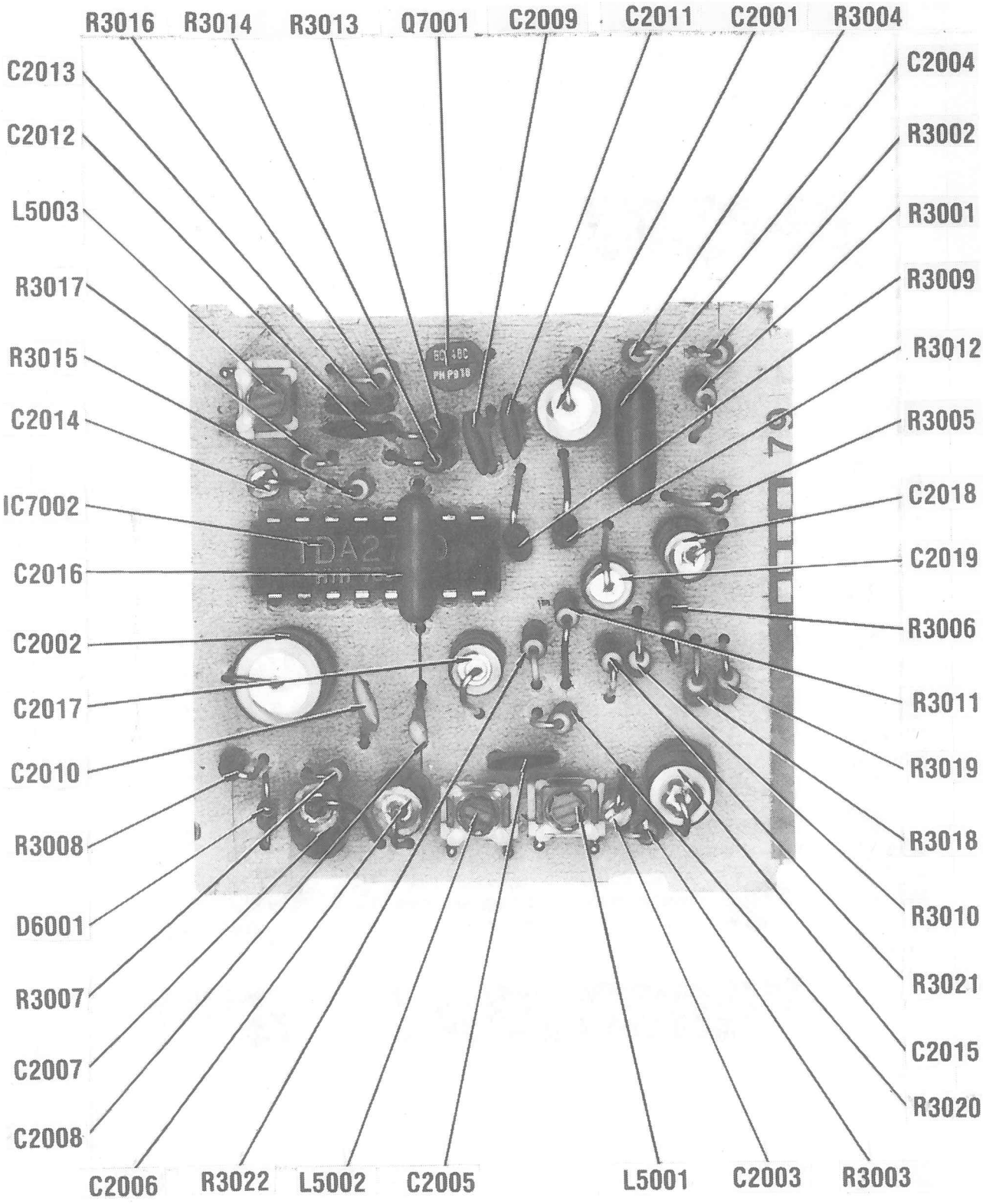

(U1628) RF PROCESSOR MODULE



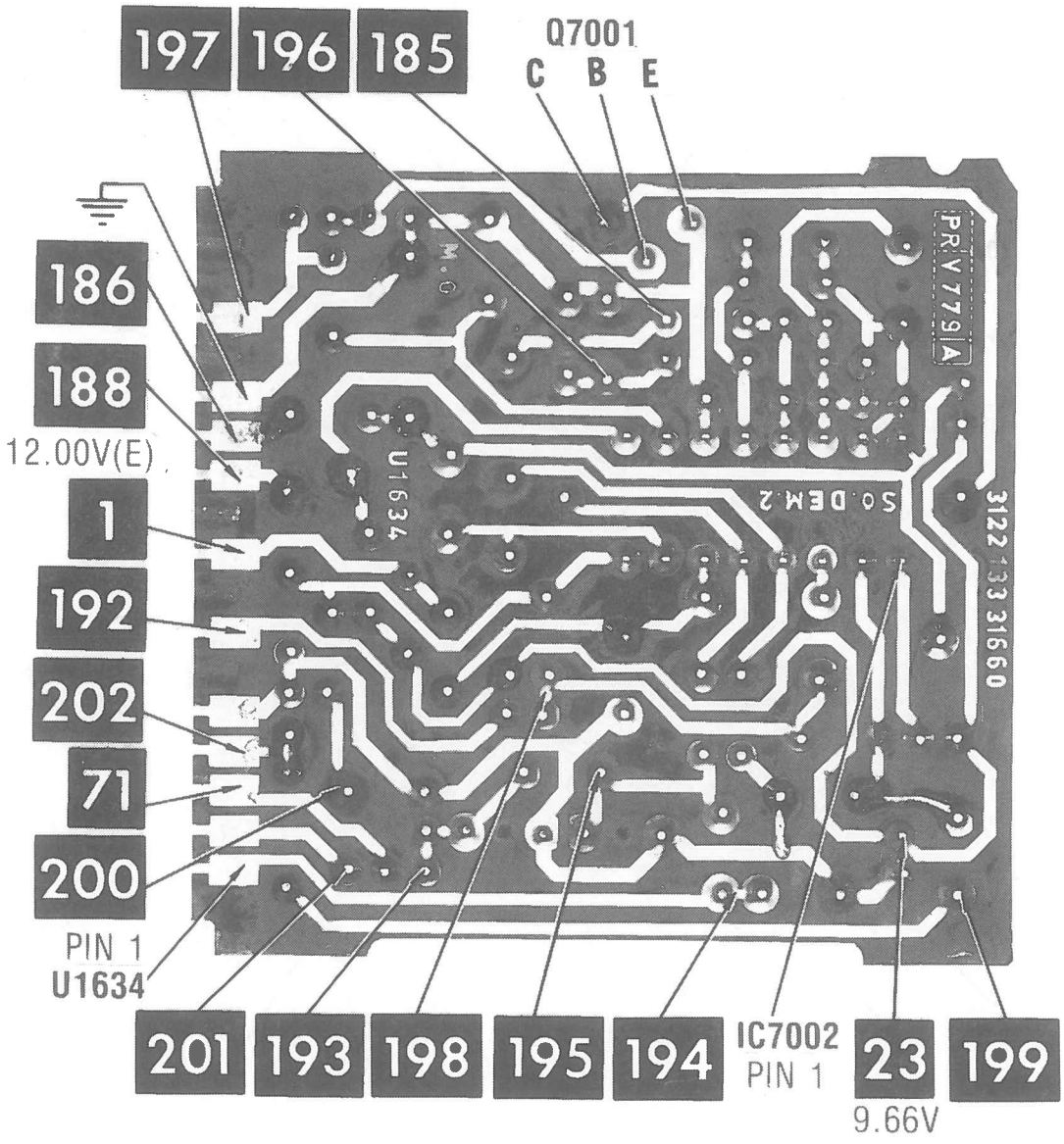

(U1628) RF PROCESSOR MODULE



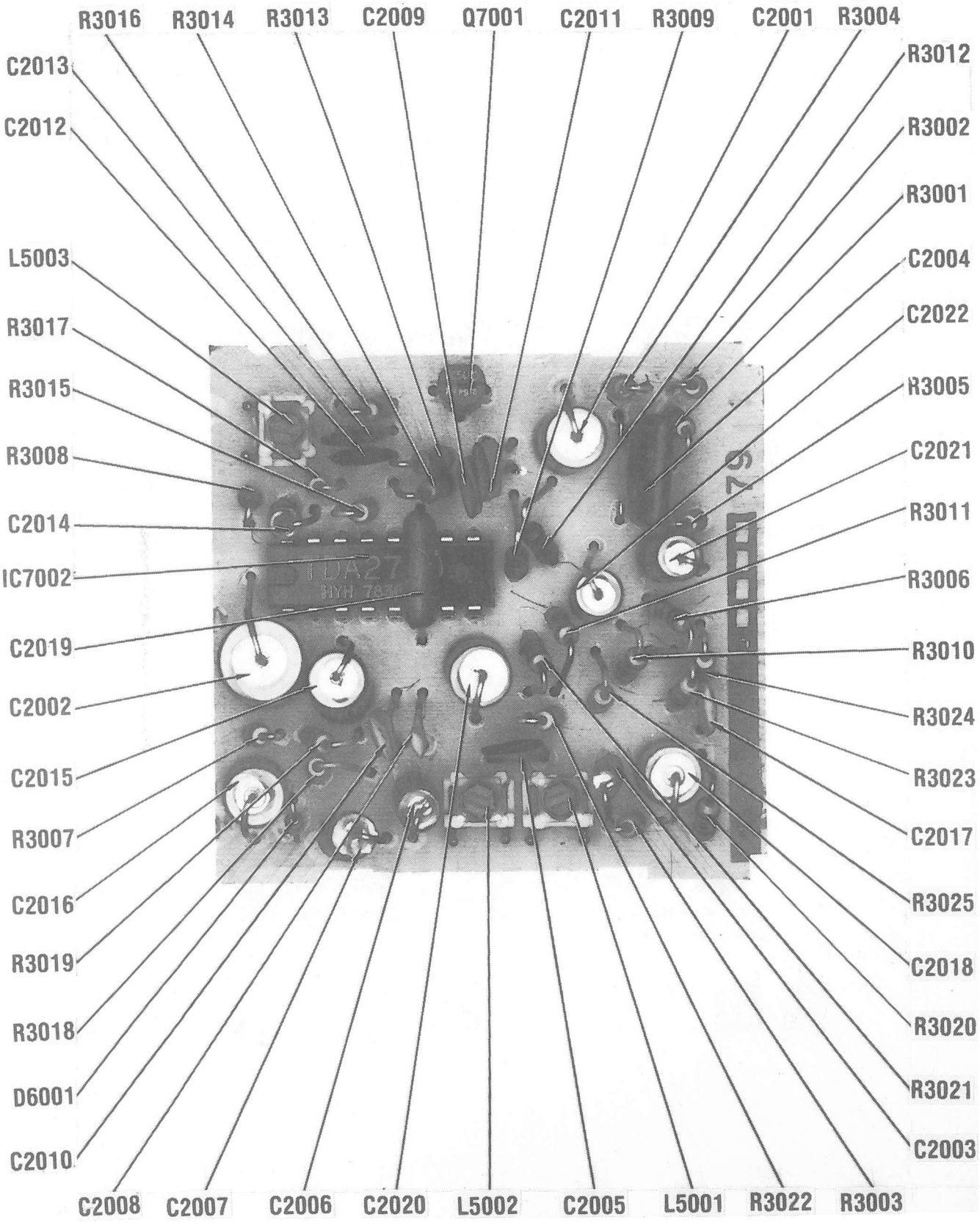

## (U1633) SOUND DEMODULATOR I MODULE



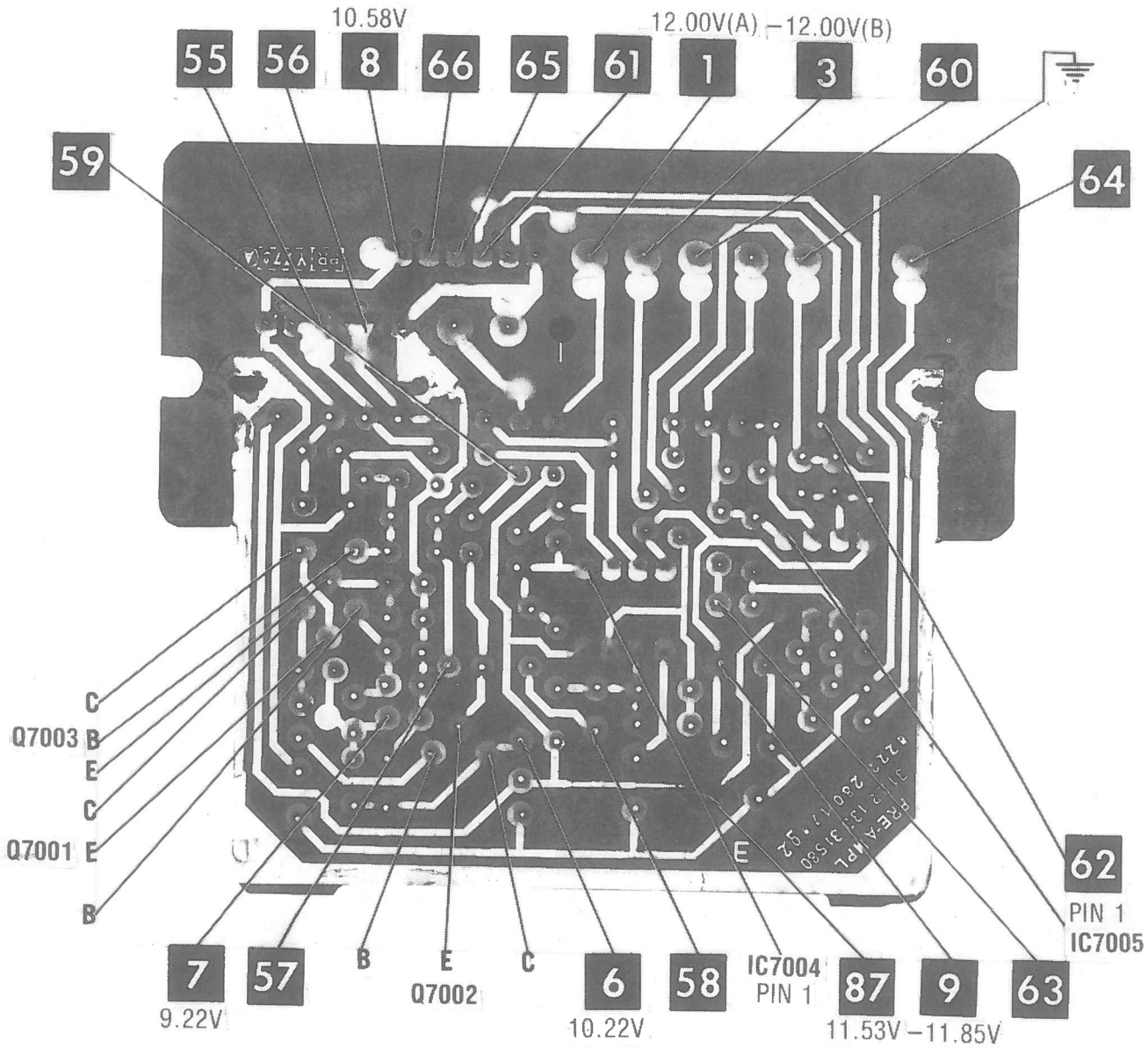

(U1633) SOUND DEMODULATOR I MODULE



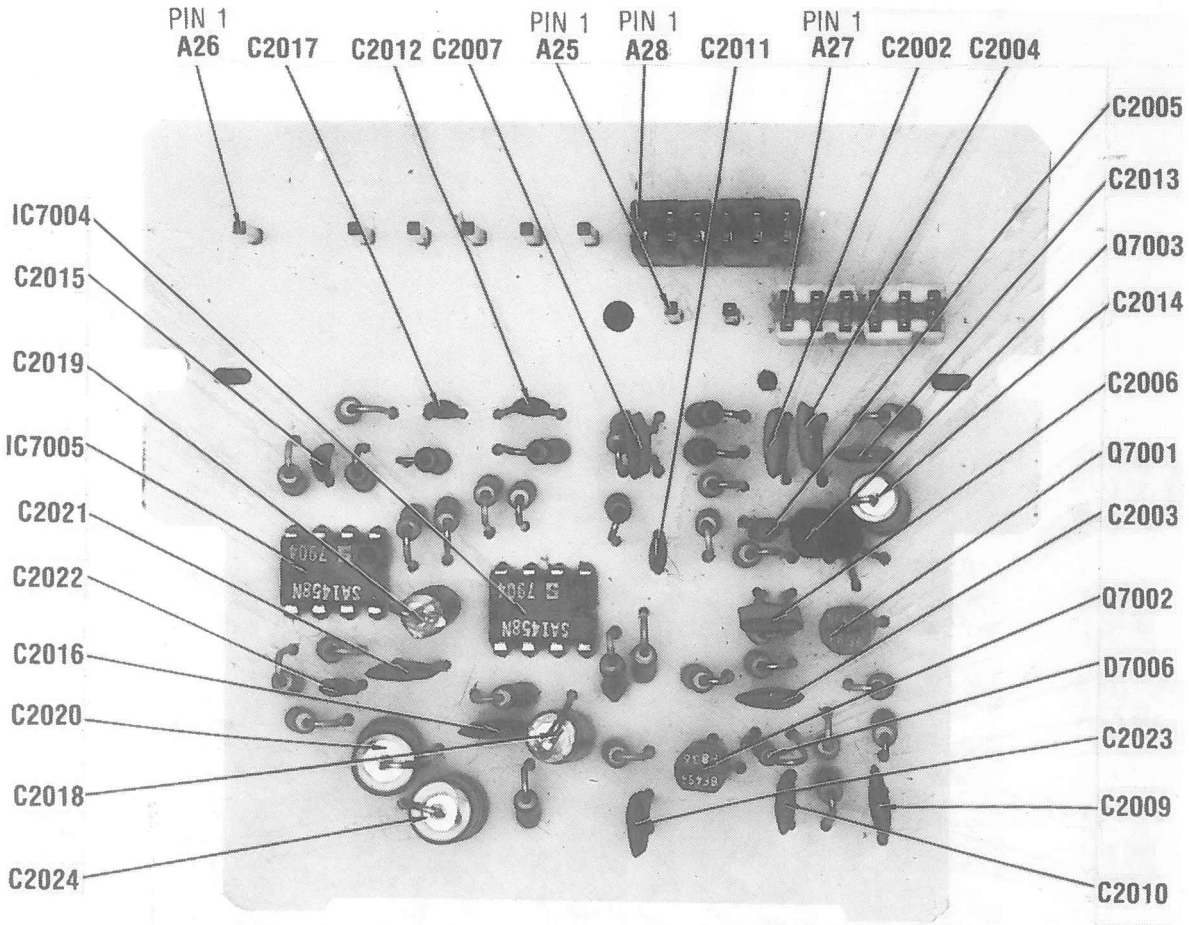

(U1634) SOUND DEMODULATOR II MODULE

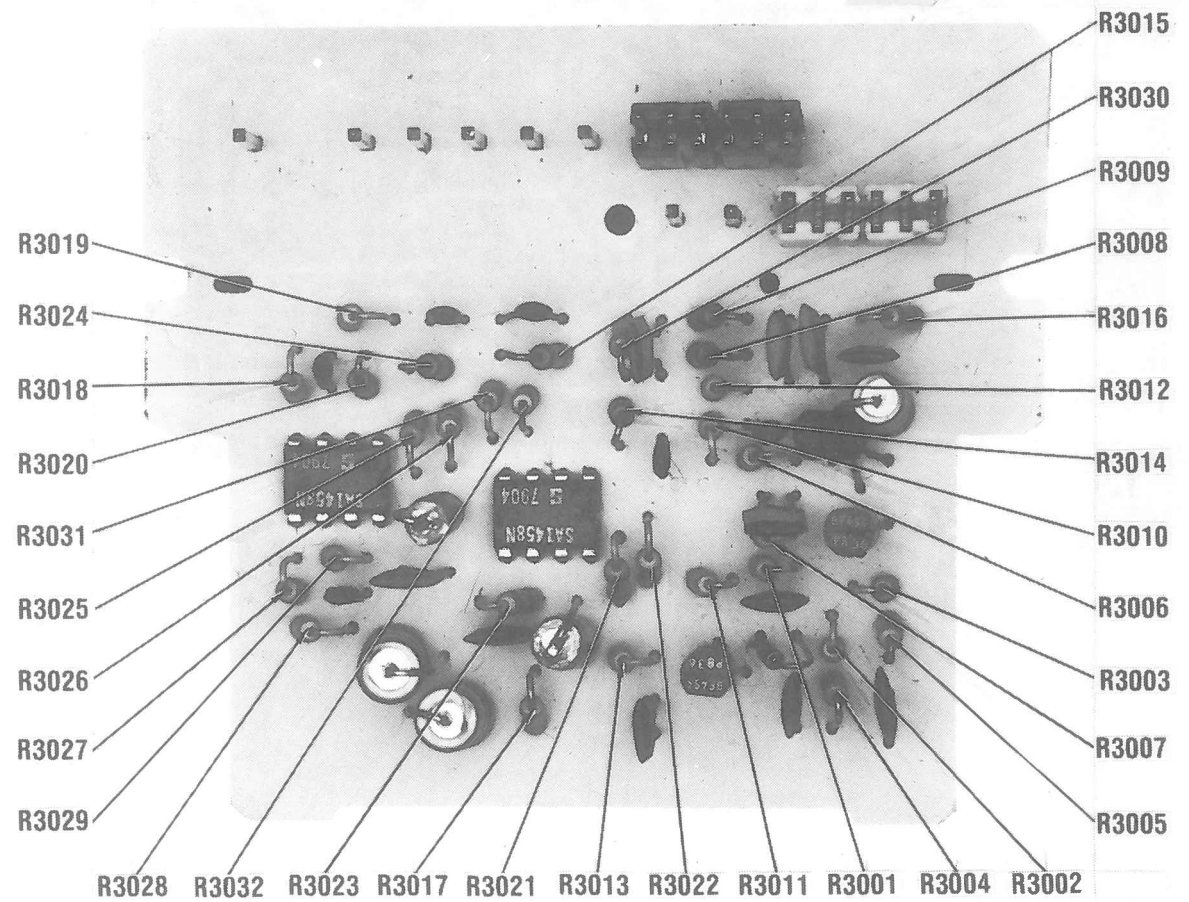



(U1634) SOUND DEMODULATOR II MODULE

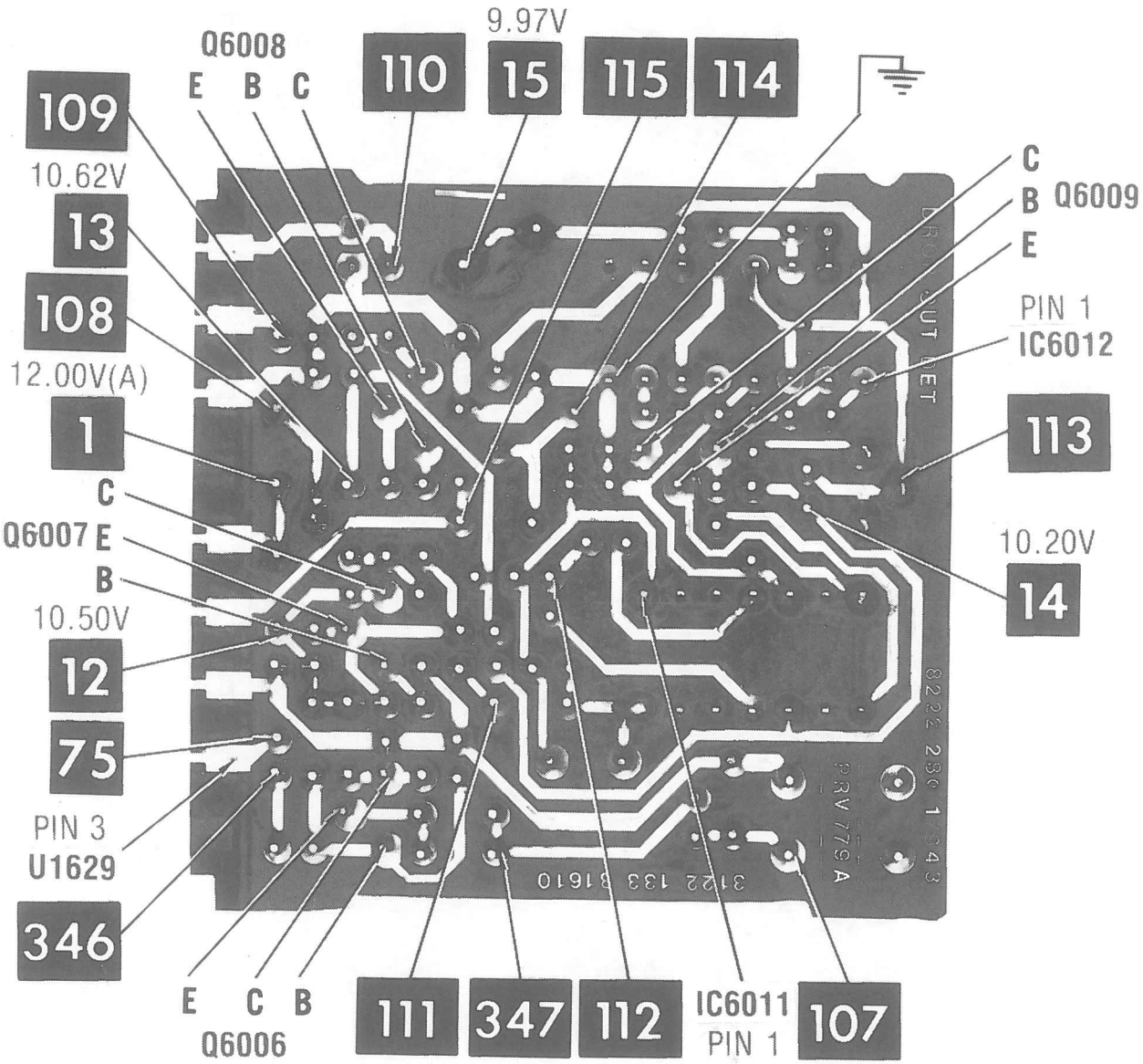



PREAMP BOARD

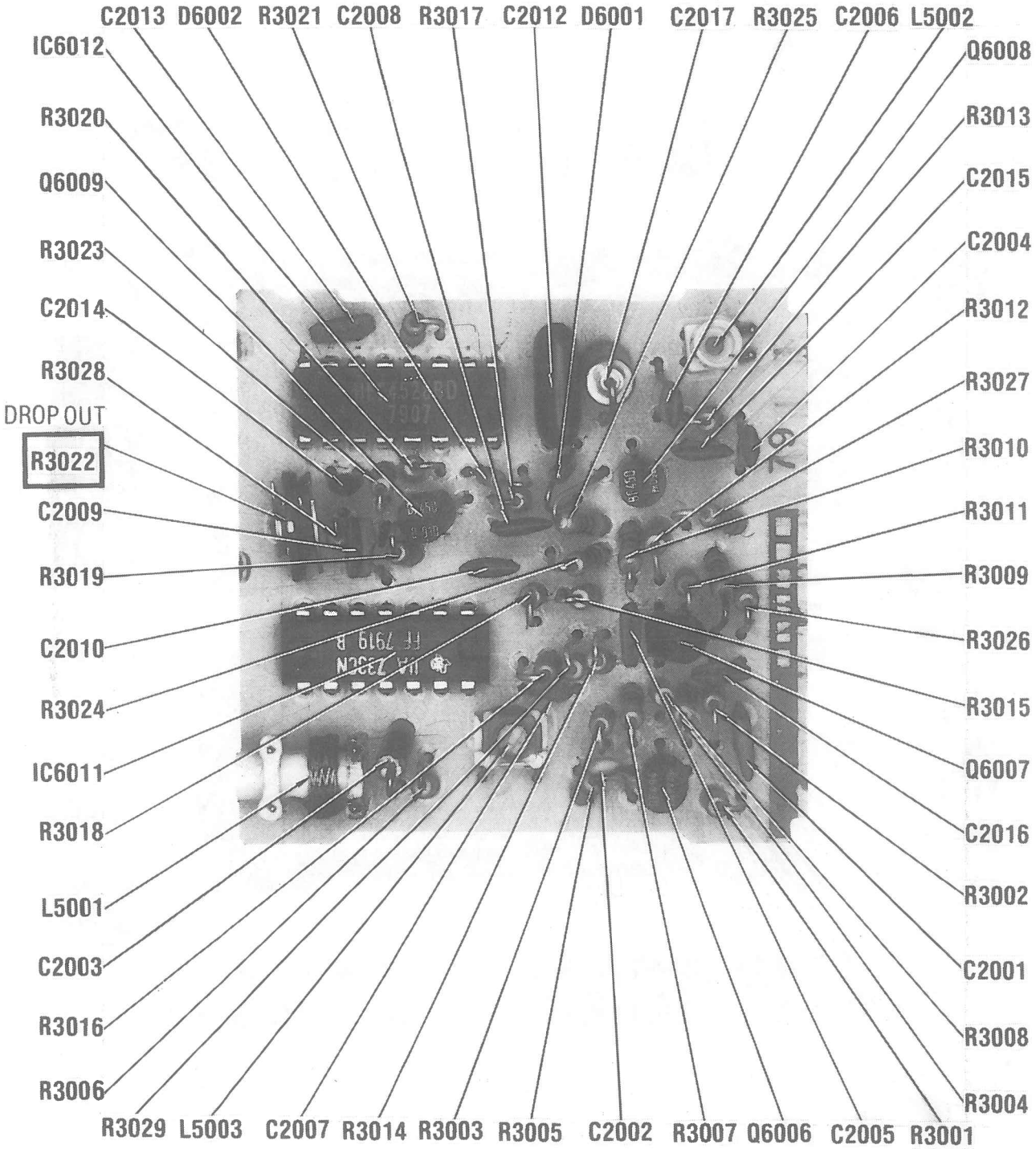


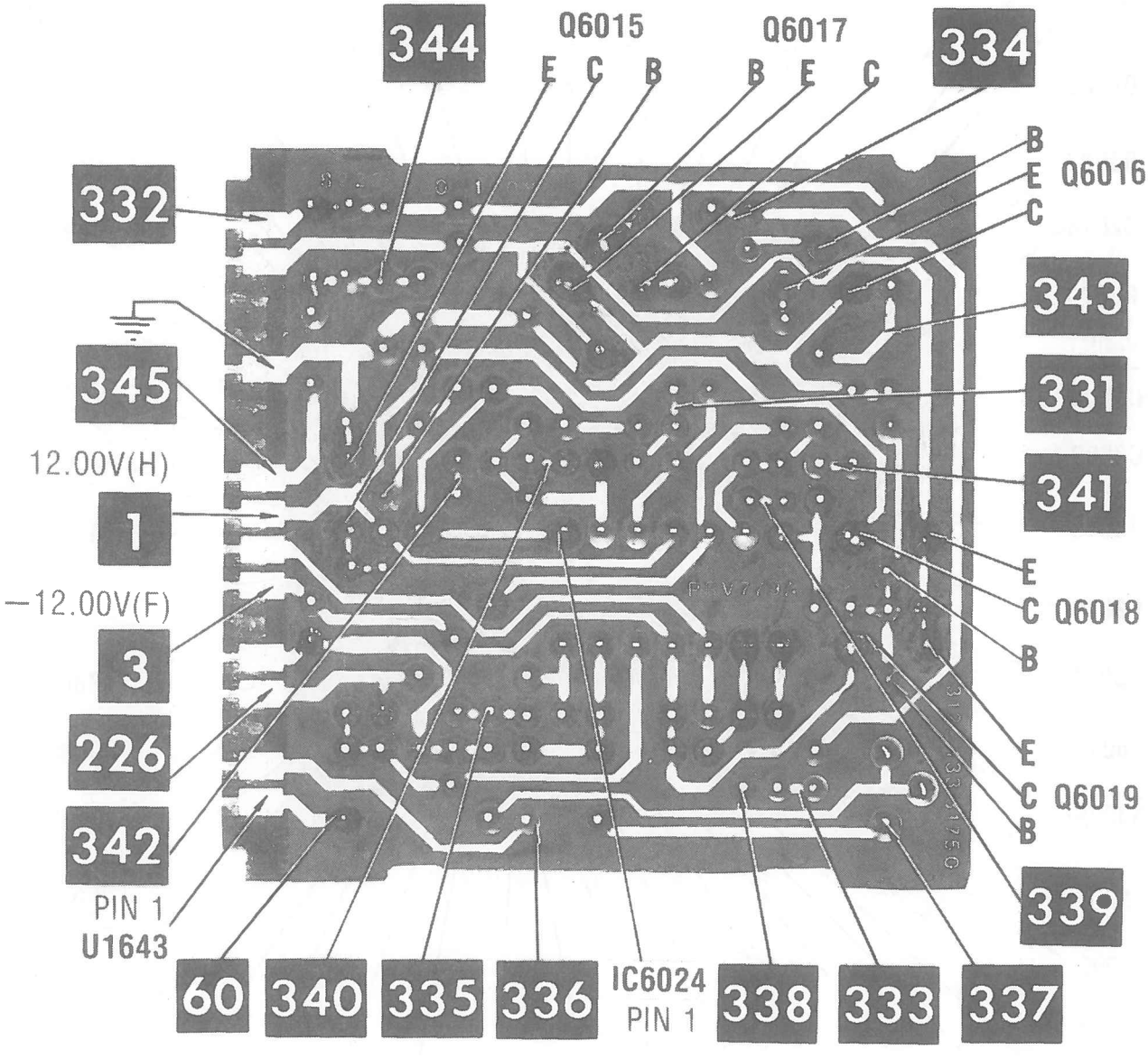

**PREAMP BOARD**



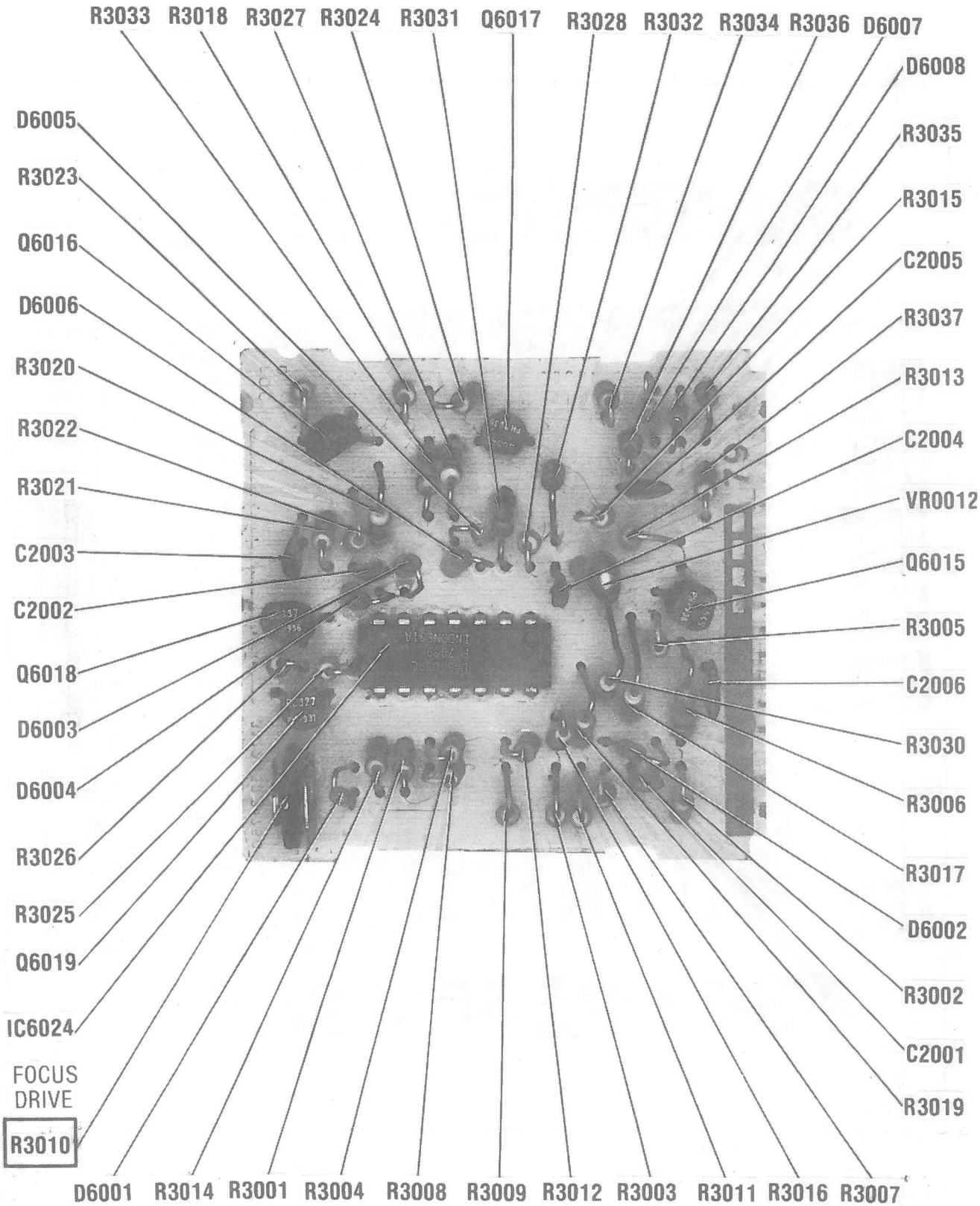

## (U1629) DROP OUT DETECTOR MODULE



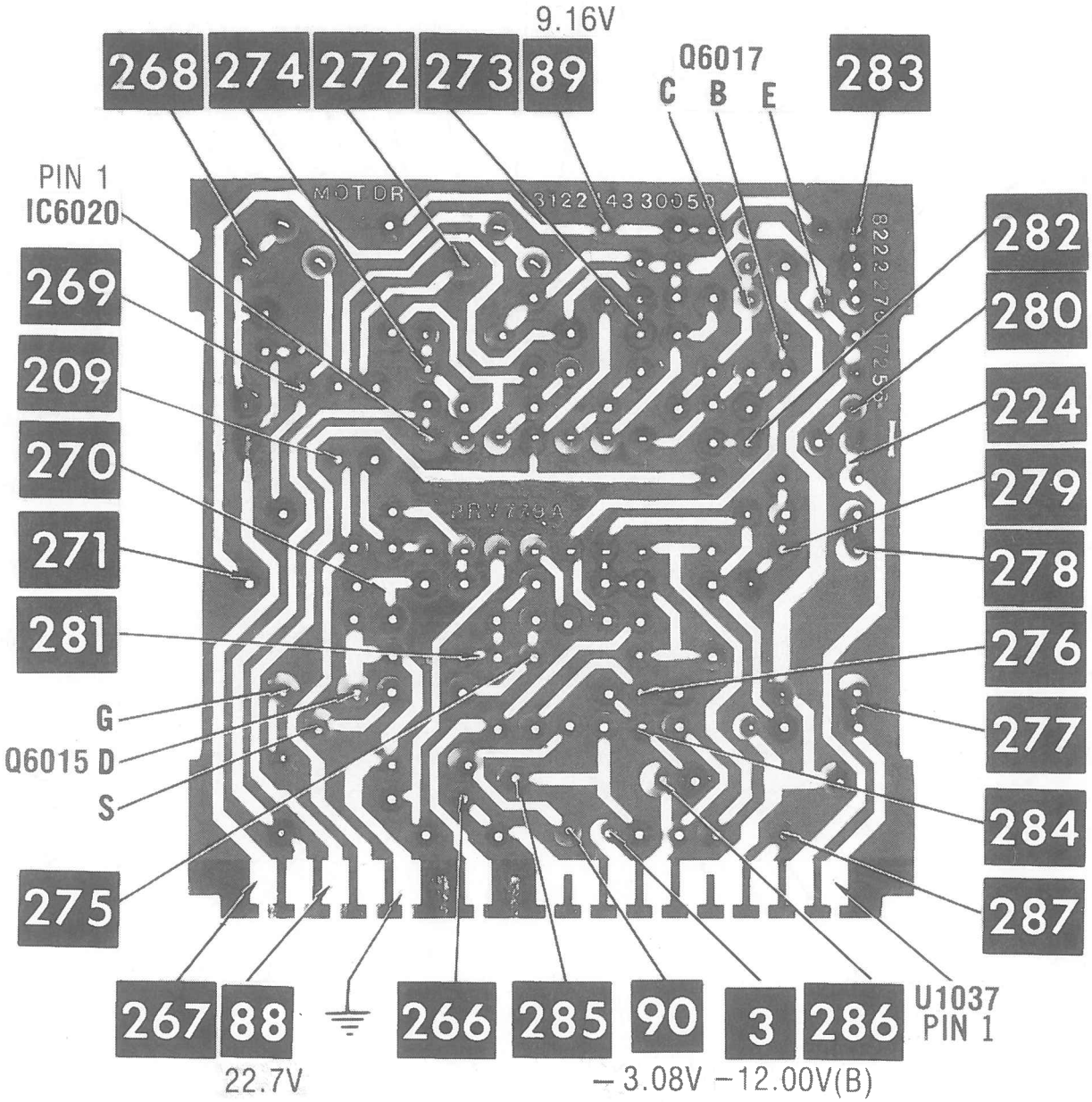

## (U1629) DROP OUT DETECTOR MODULE



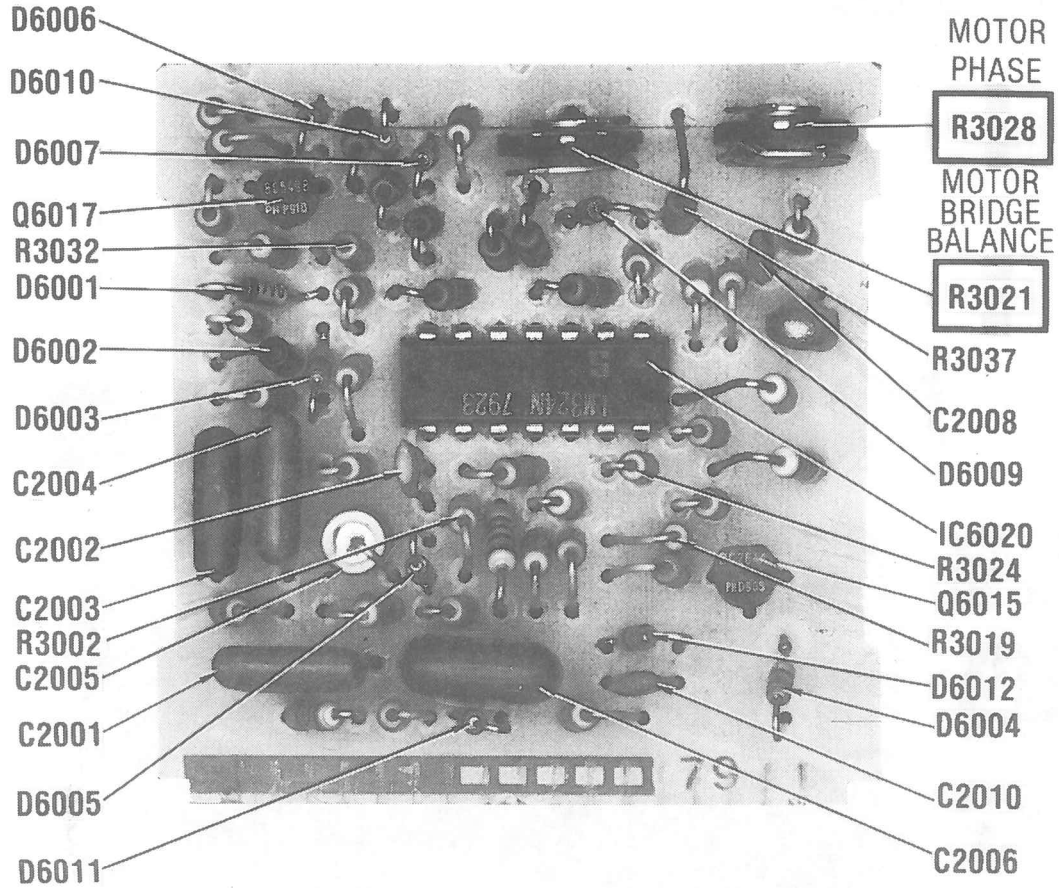

(U1643) FOCUS DRIVE MODULE

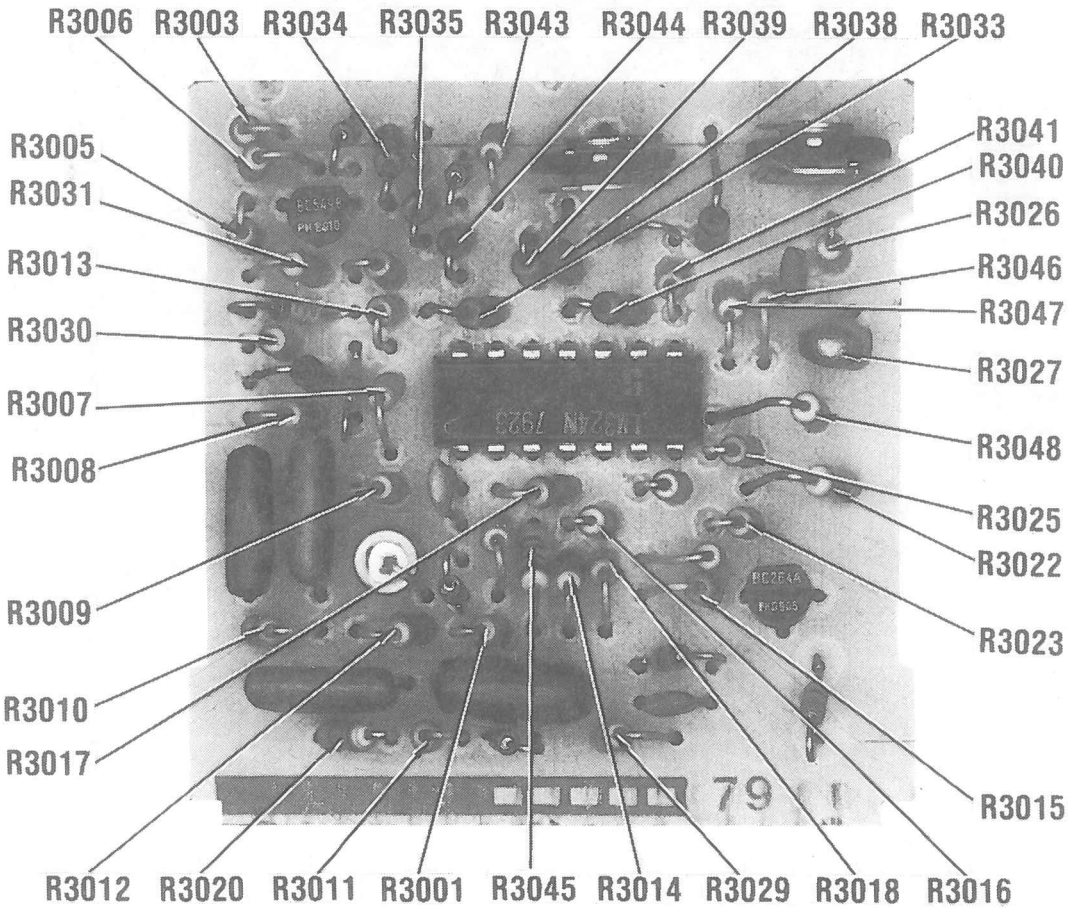



(U1643) FOCUS DRIVE MODULE

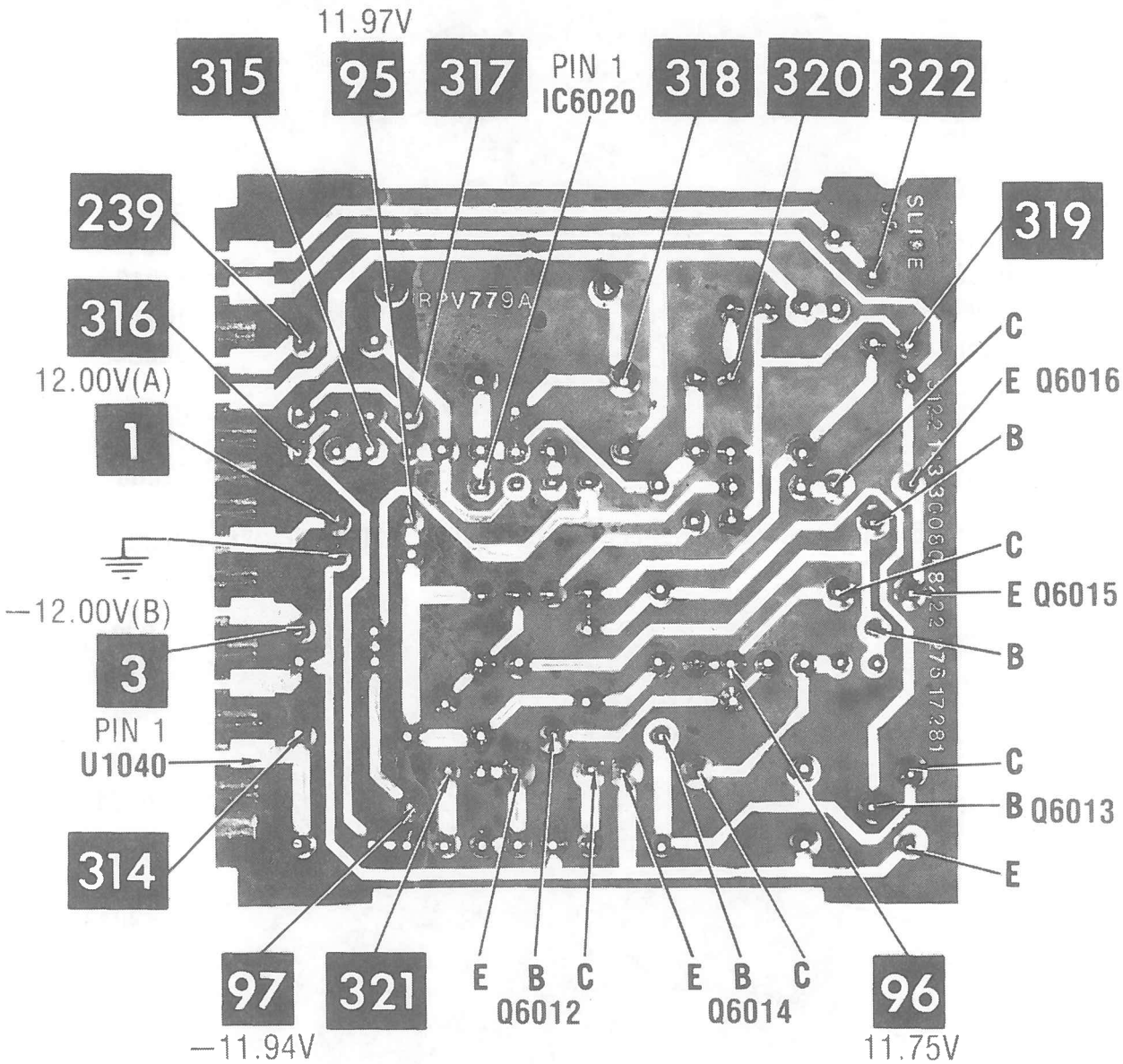



(U1037) MOTOR DRIVE MODULE

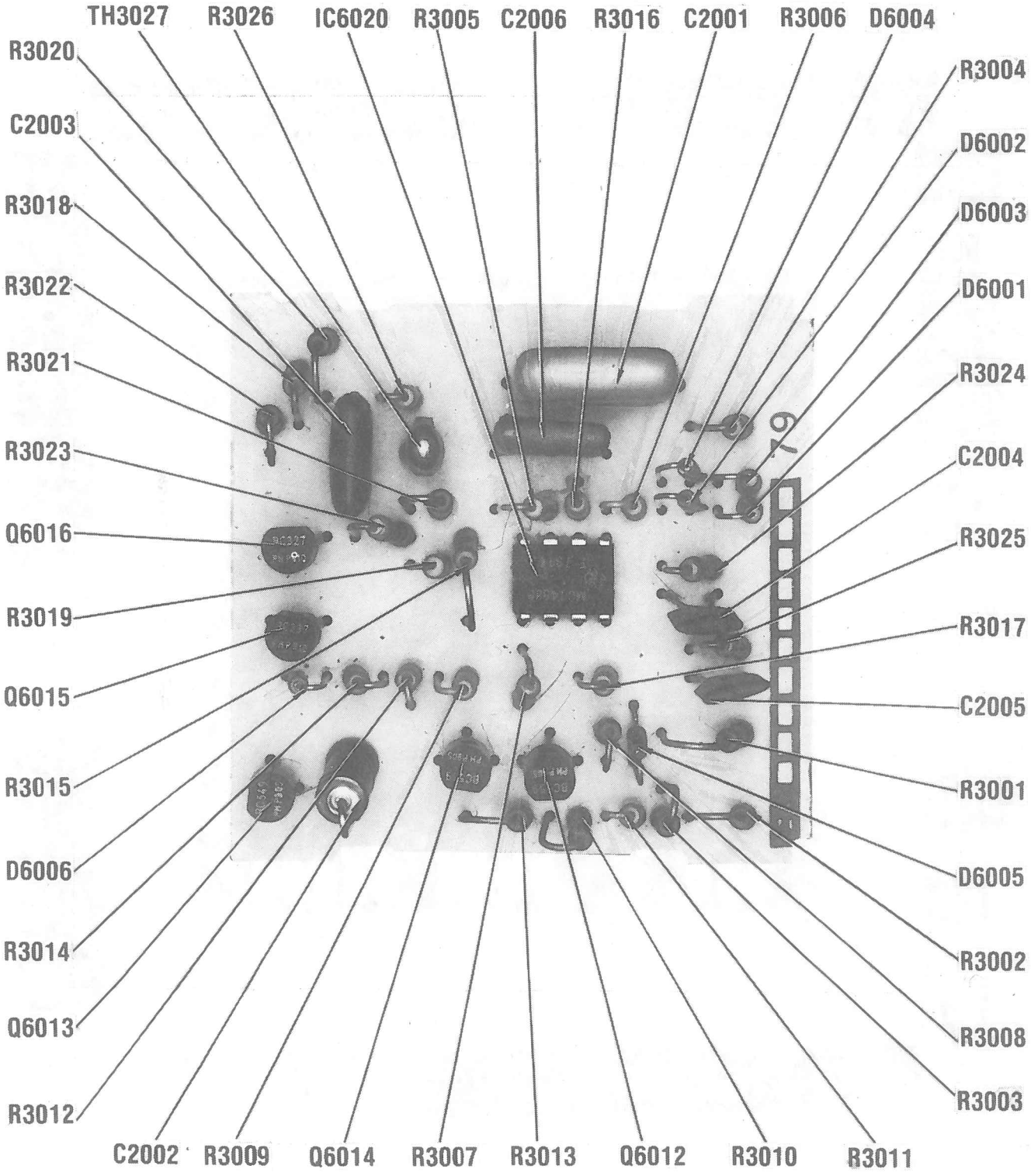


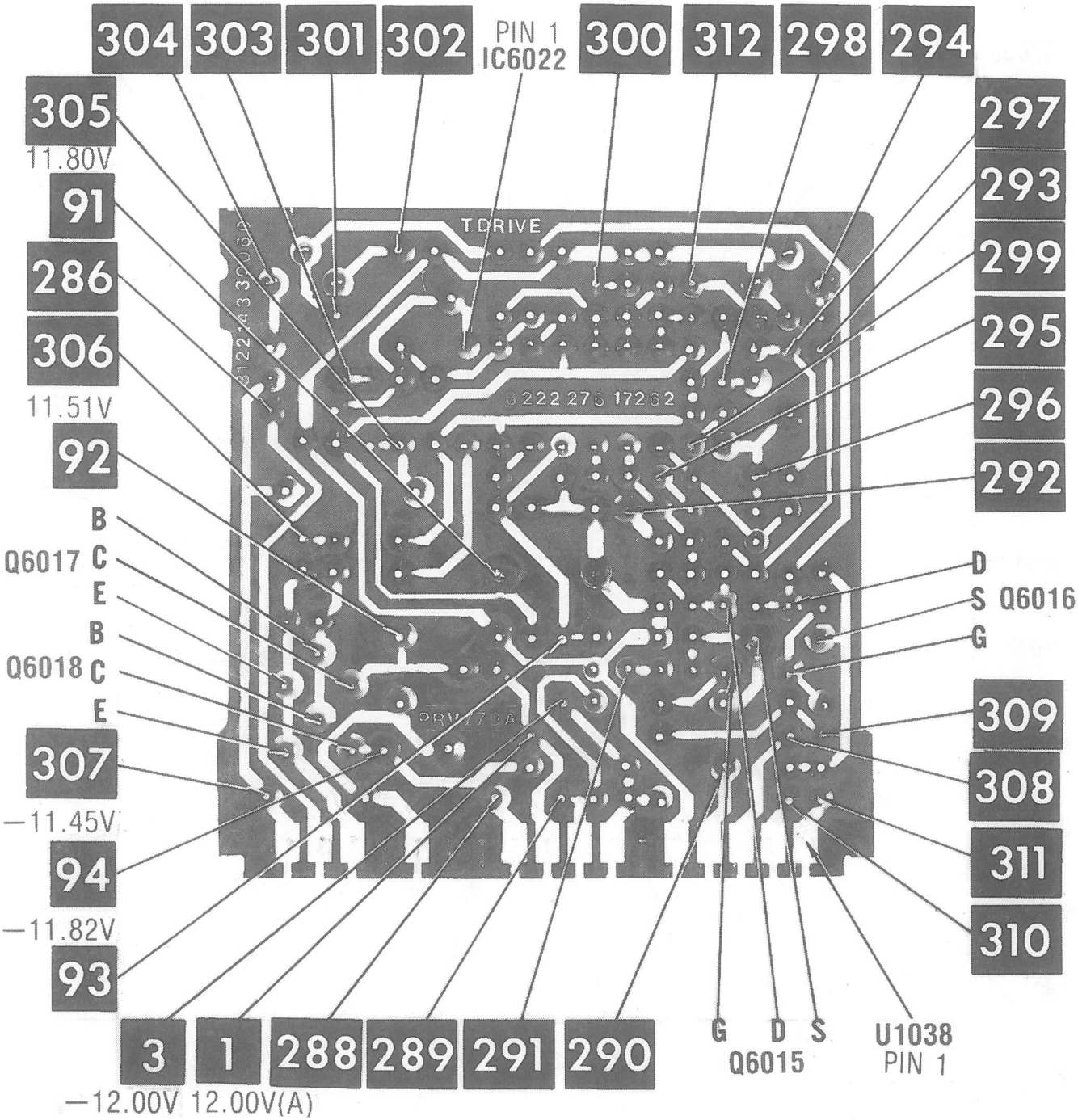

(U1037) MOTOR DRIVE MODULE



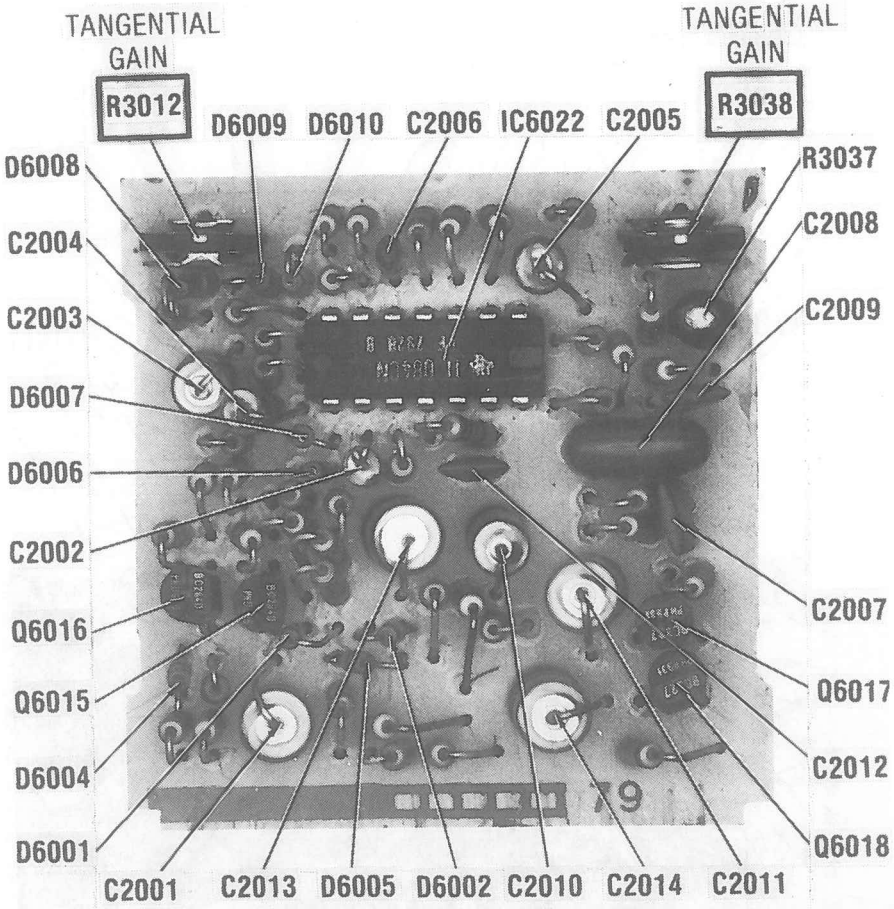

(U1040) SLIDE DRIVE MODULE

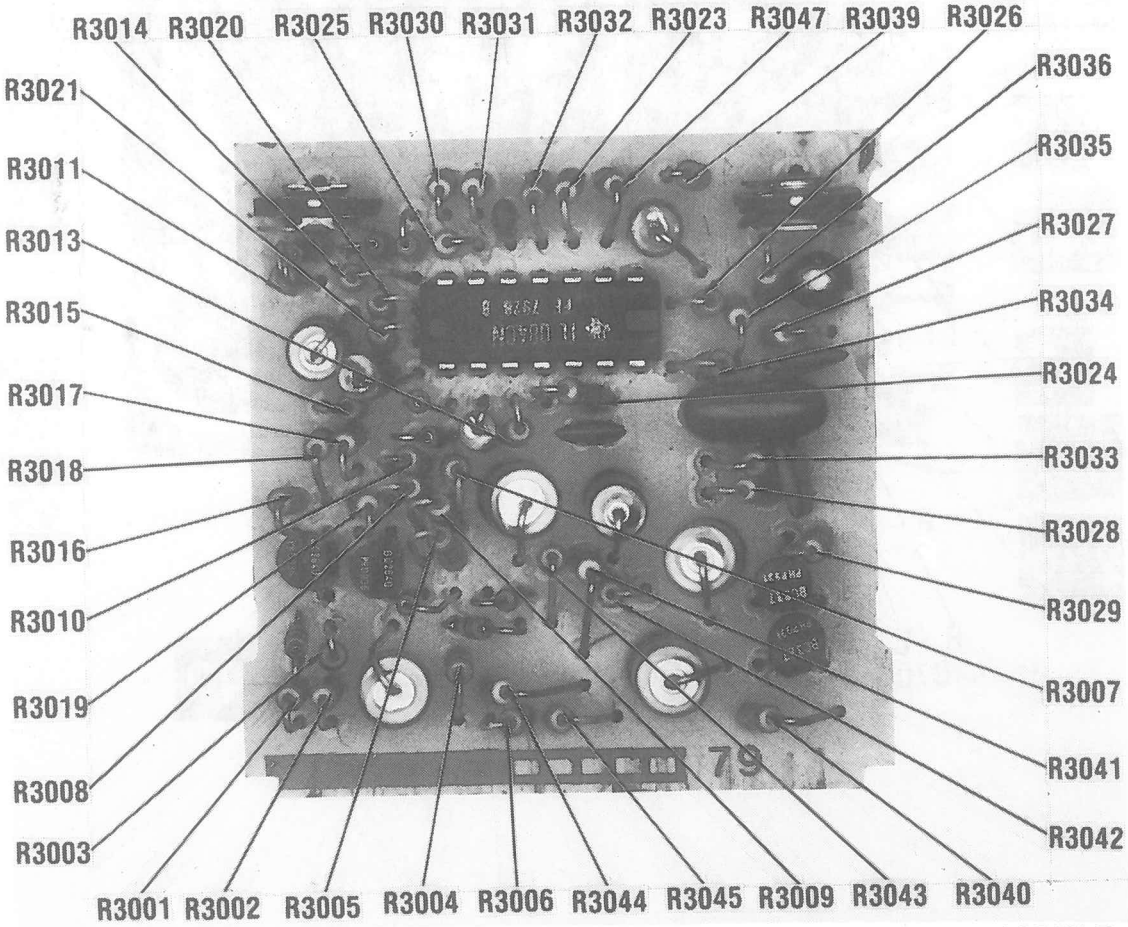



(U1040) SLIDE DRIVE MODULE

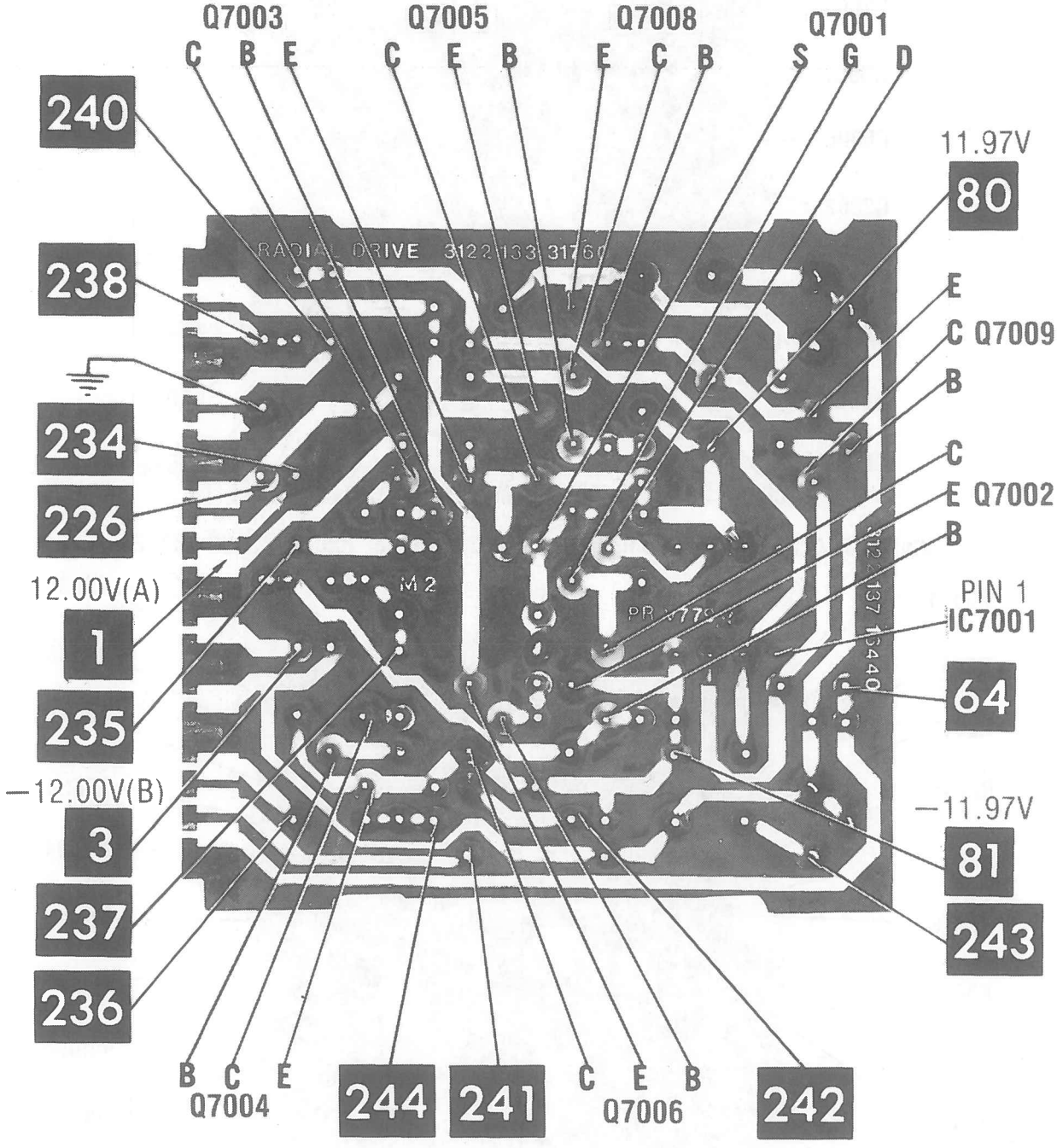



(U1038) TANGENTIAL DRIVE MODULE

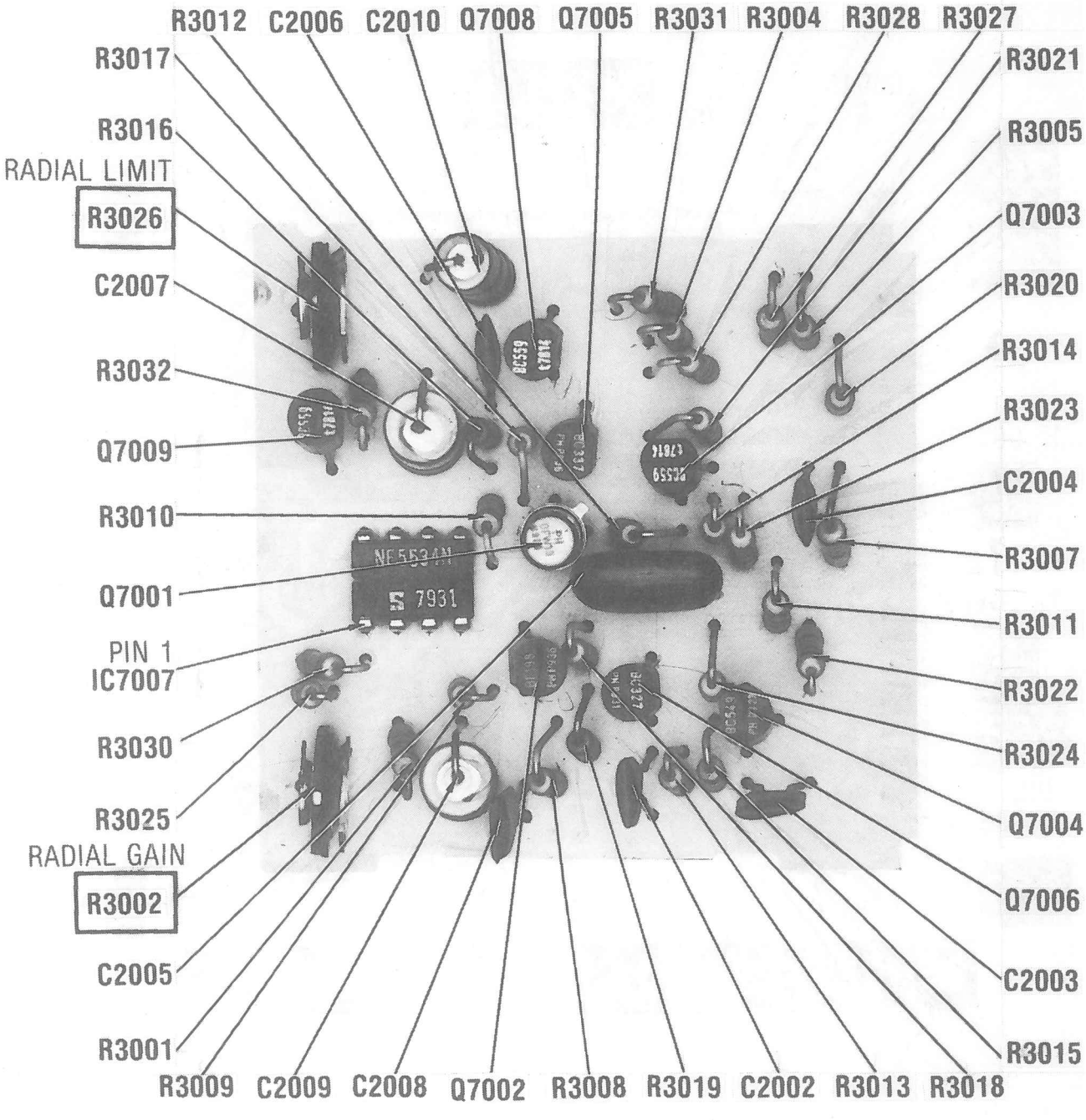


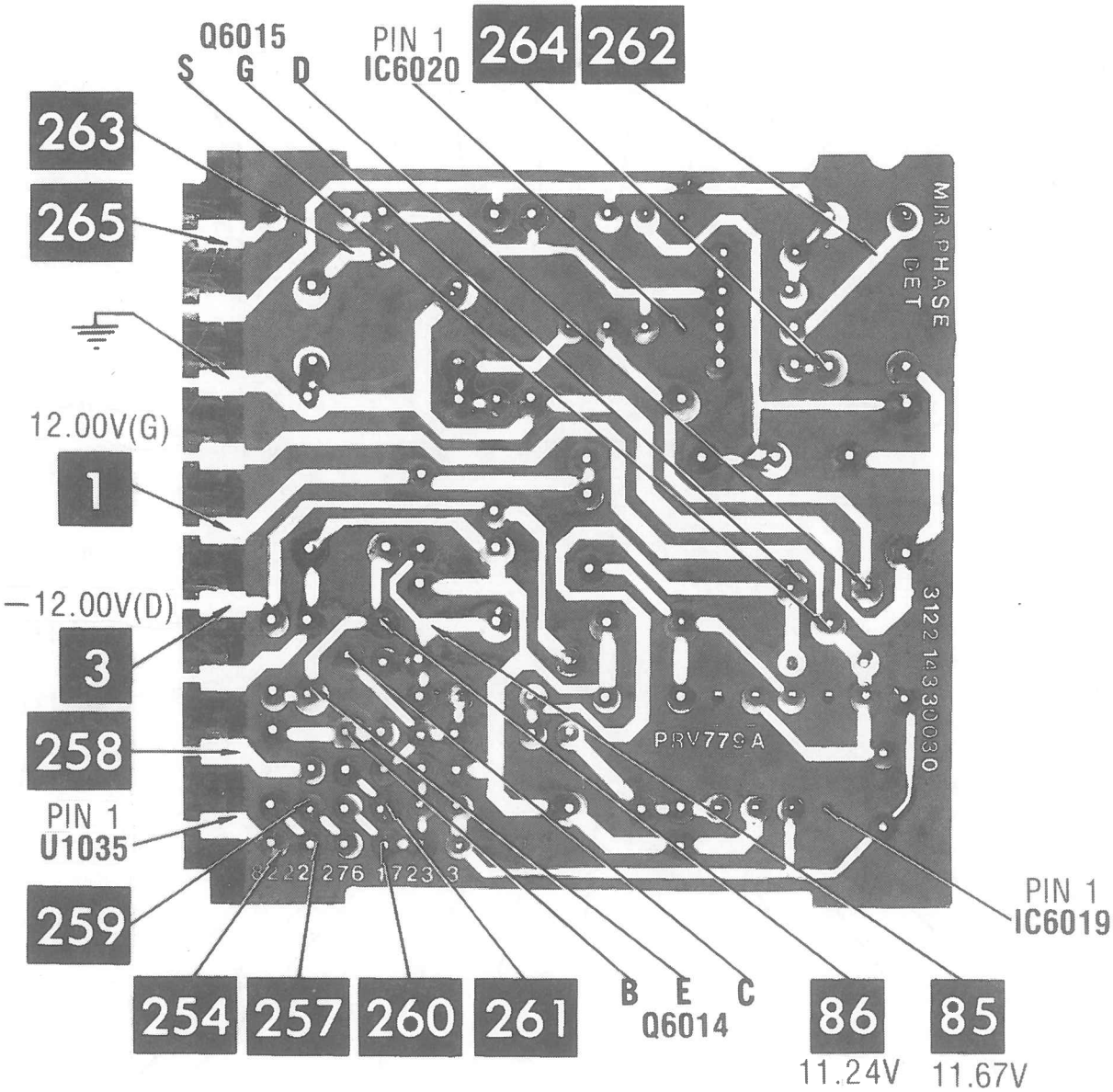

(U1038) TANGENTIAL DRIVE MODULE



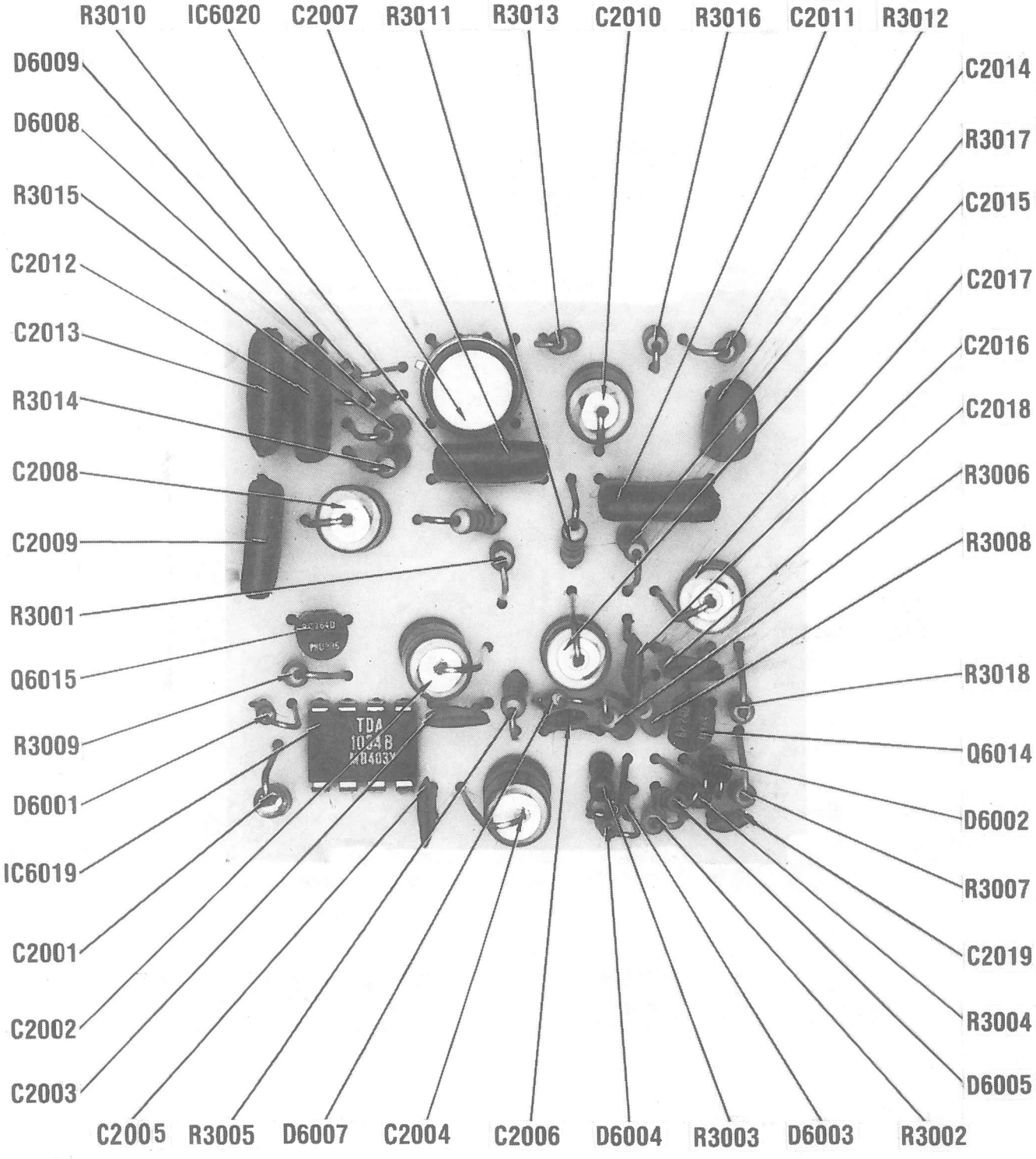

(U1644) RADIAL DRIVE MODULE



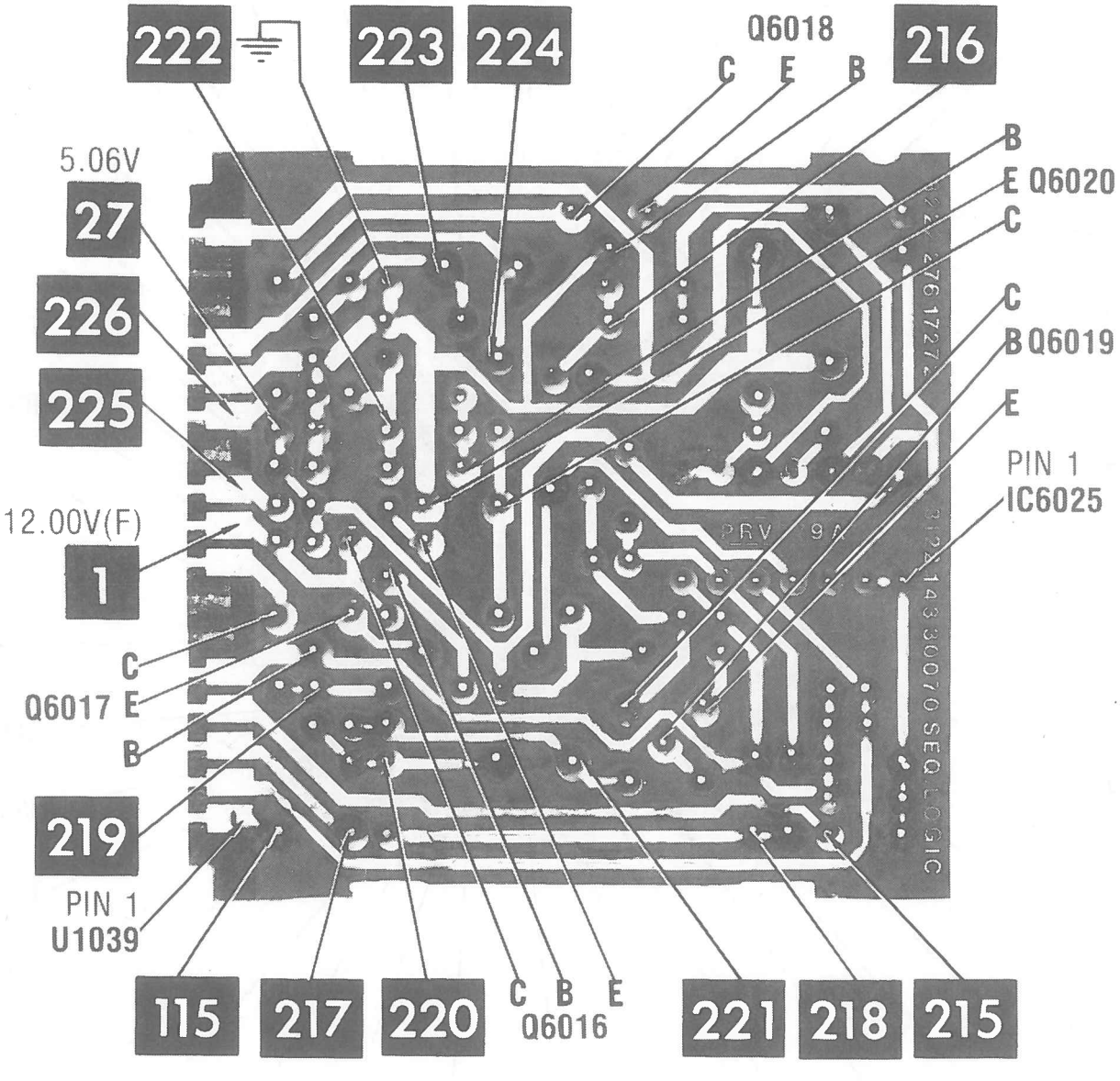

(U1644) RADIAL DRIVE MODULE



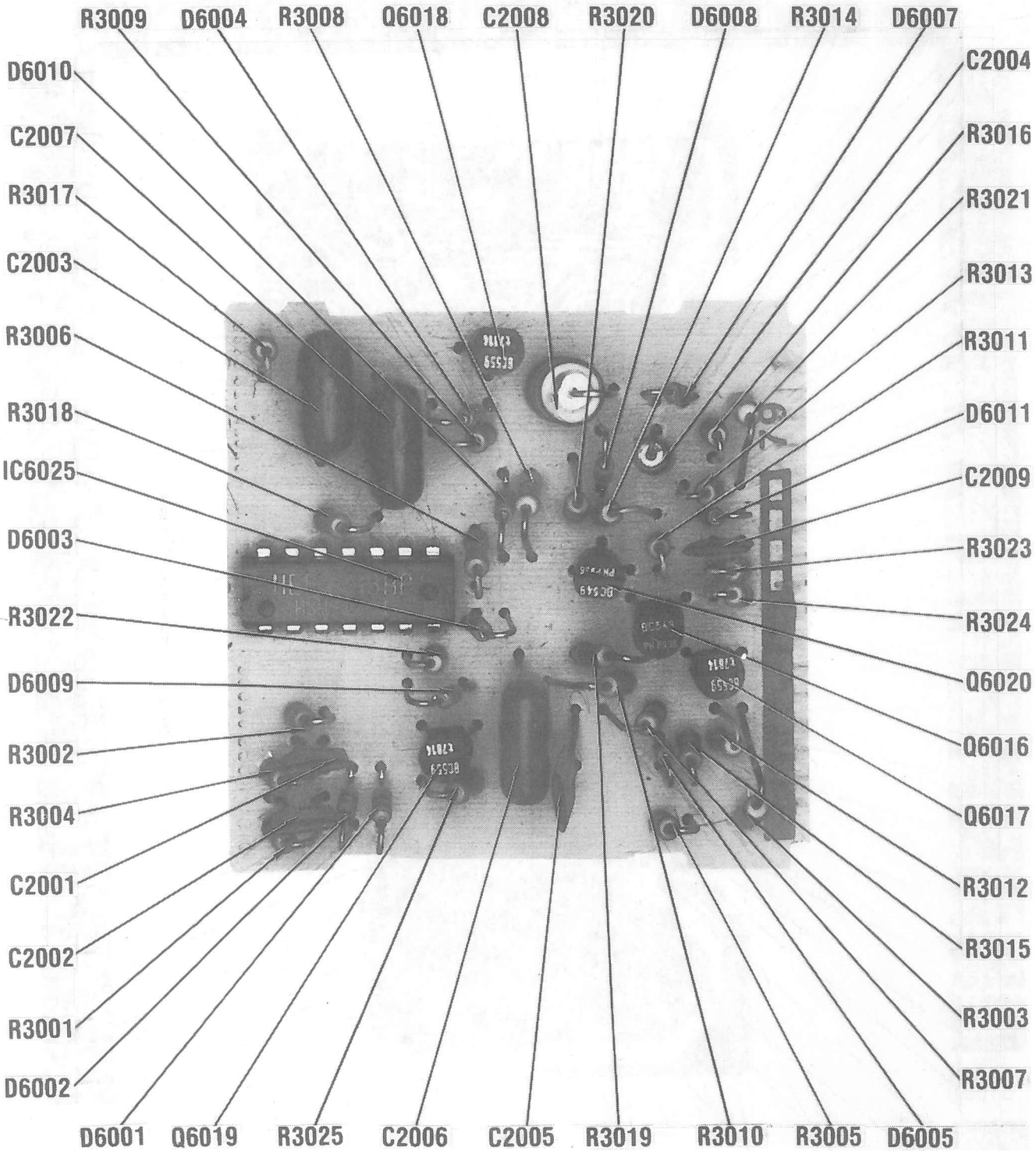

(U1035) MIRROR PHASE MODULE



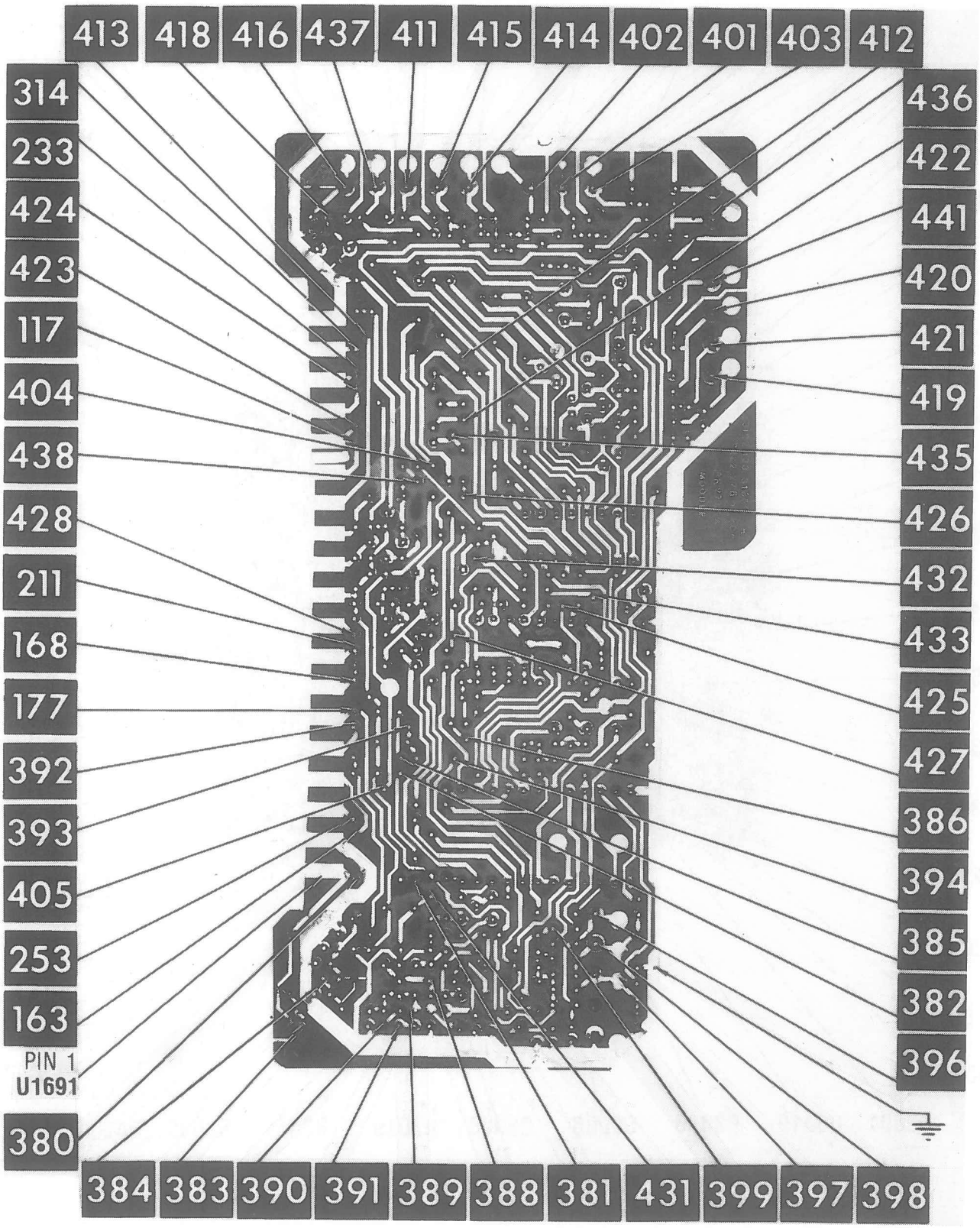

(U1035) MIRROR PHASE MODULE



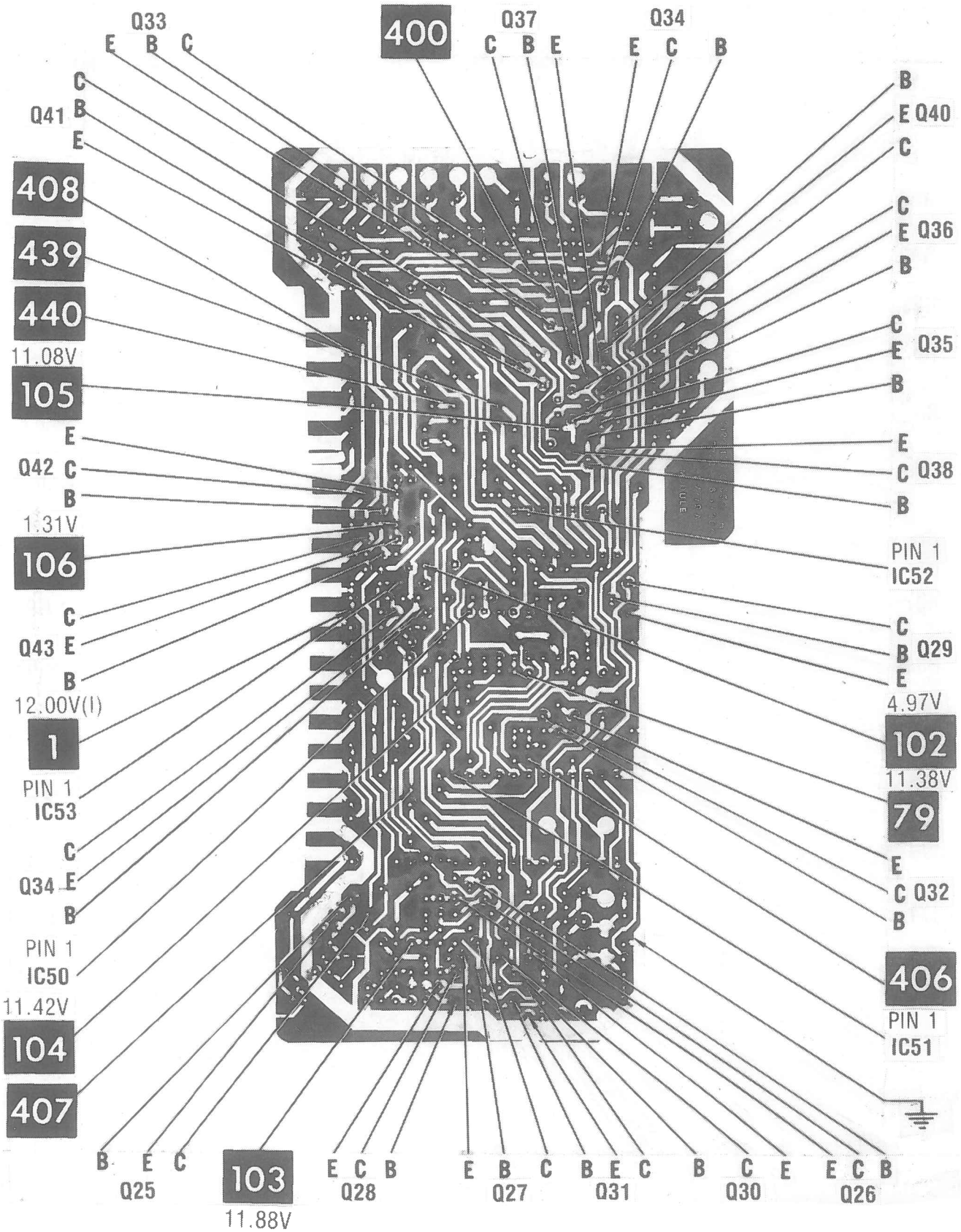

(U1039) SEQUENCE LOGIC MODULE



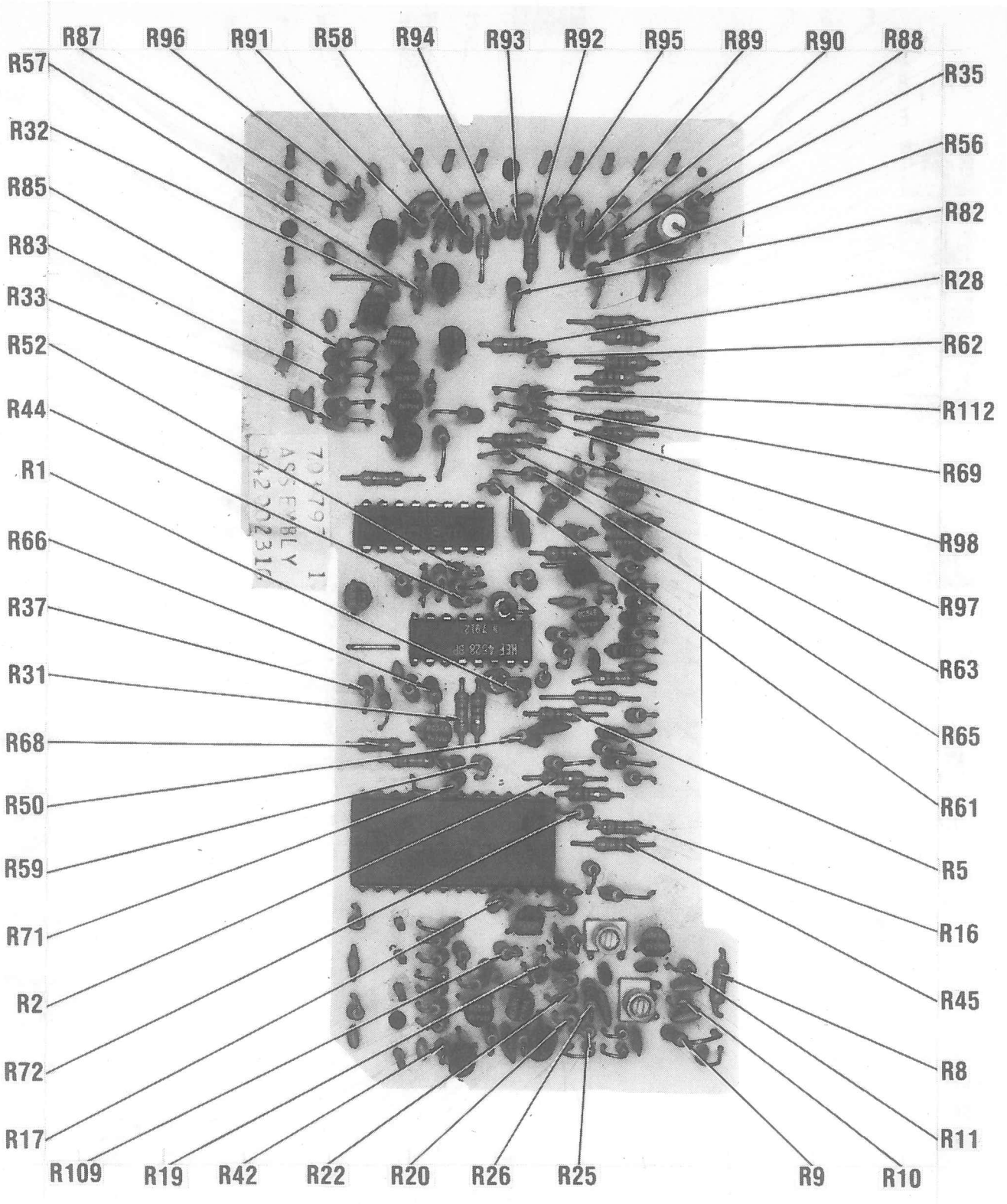

(U1039) SEQUENCE LOGIC MODULE



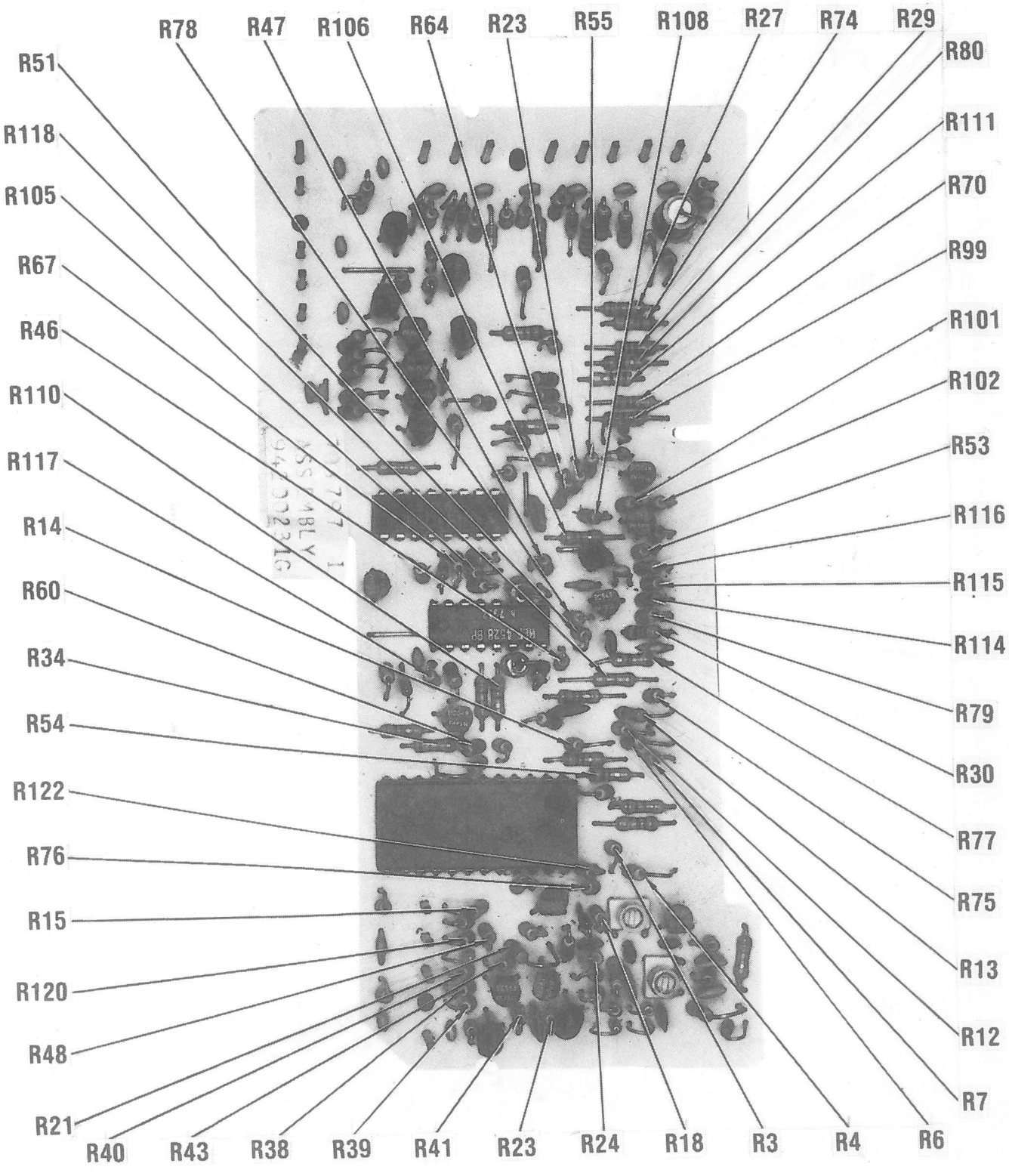

## (U1691) MODE CONTROL MODULE



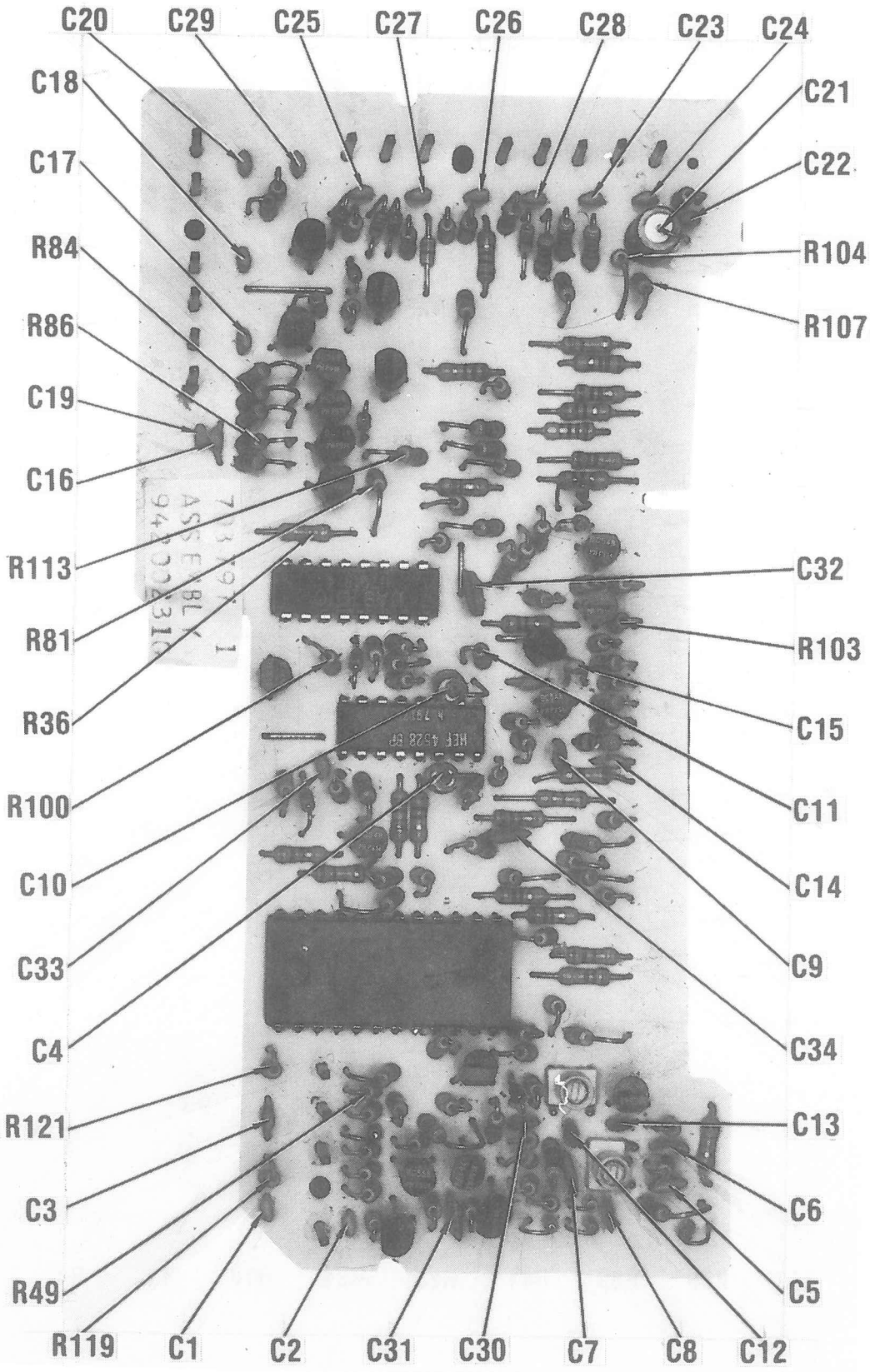

(U1691) MODE CONTROL MODULE



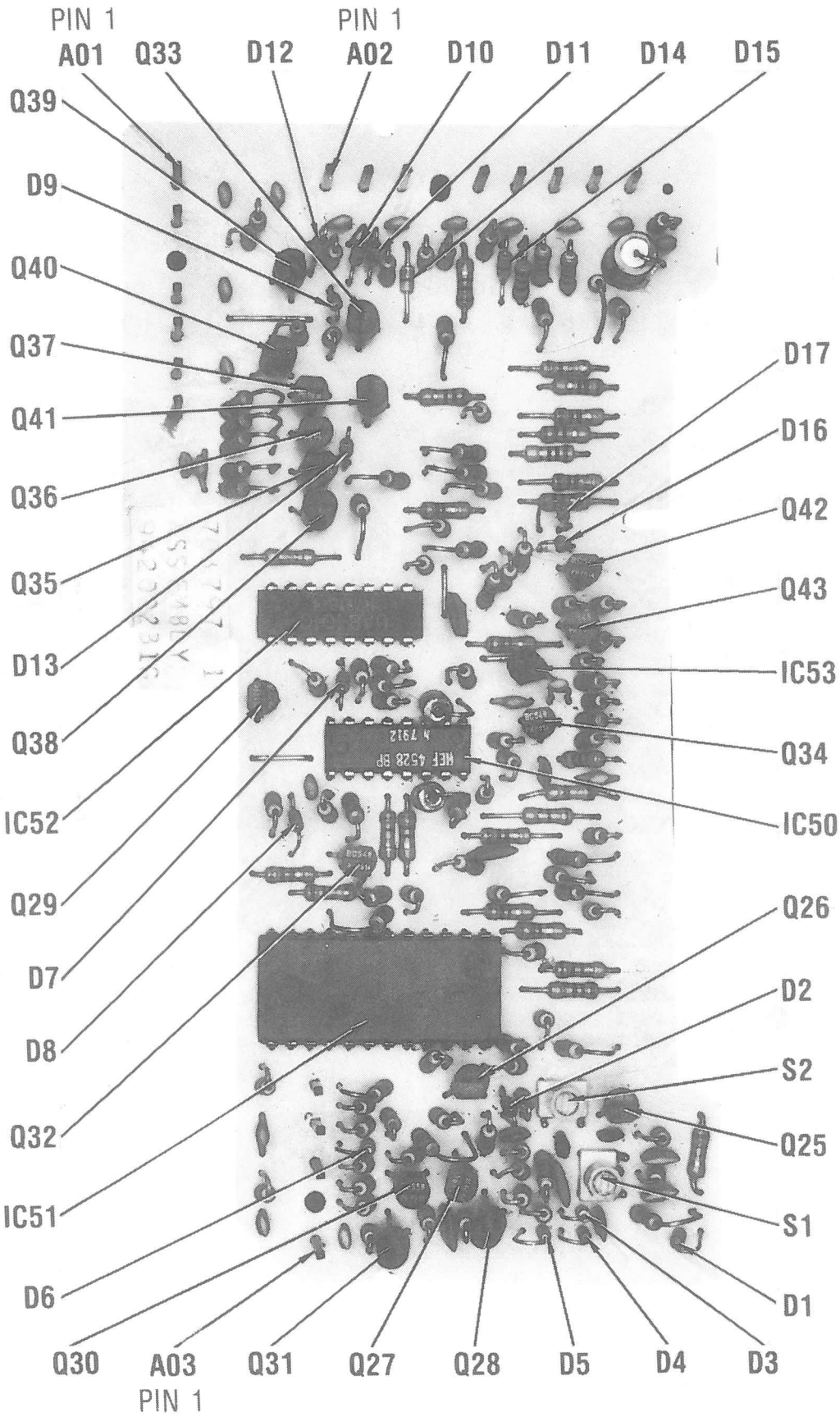

(U1691) MODE CONTROL MODULE



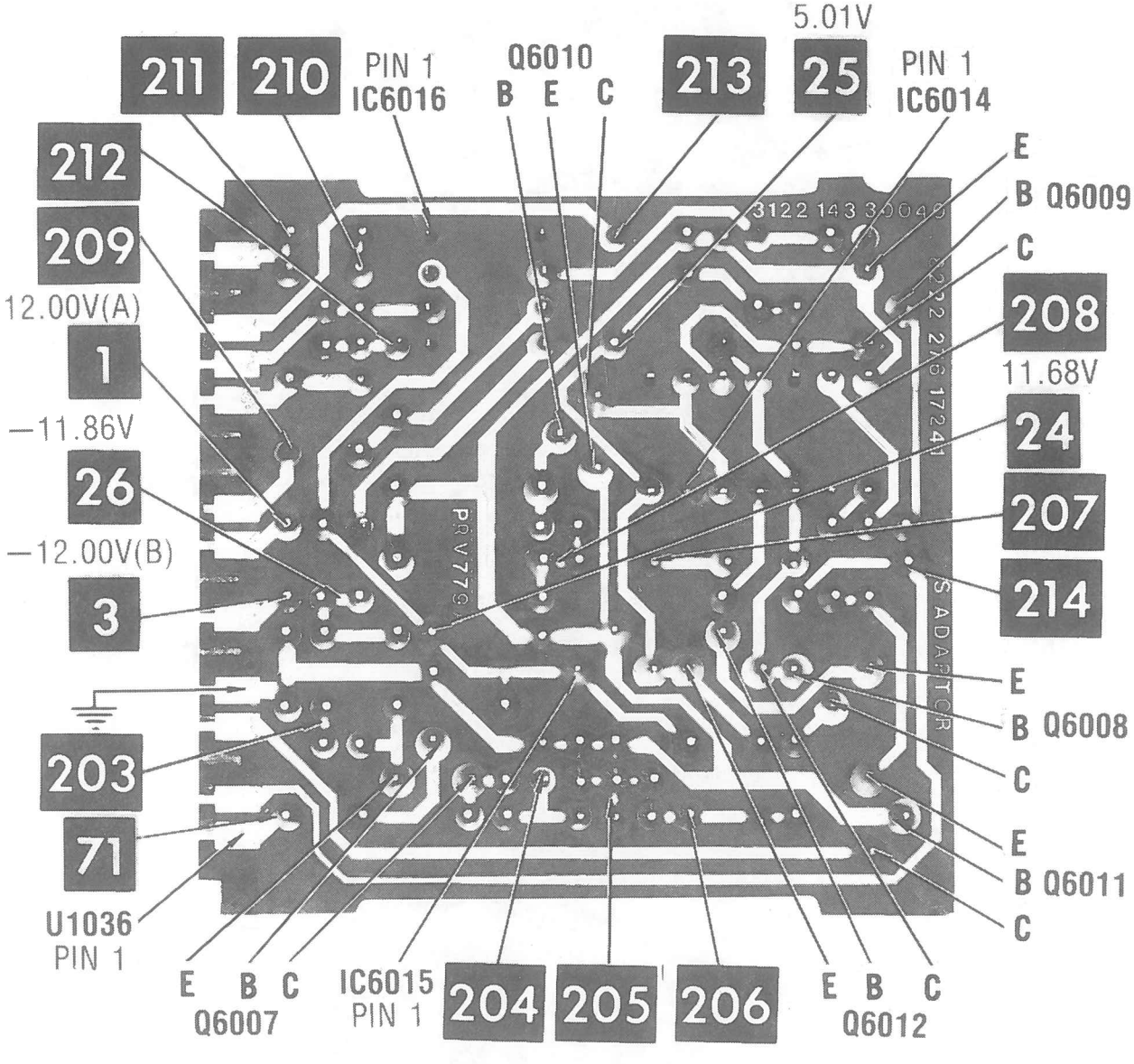

(U1691) MODE CONTROL MODULE



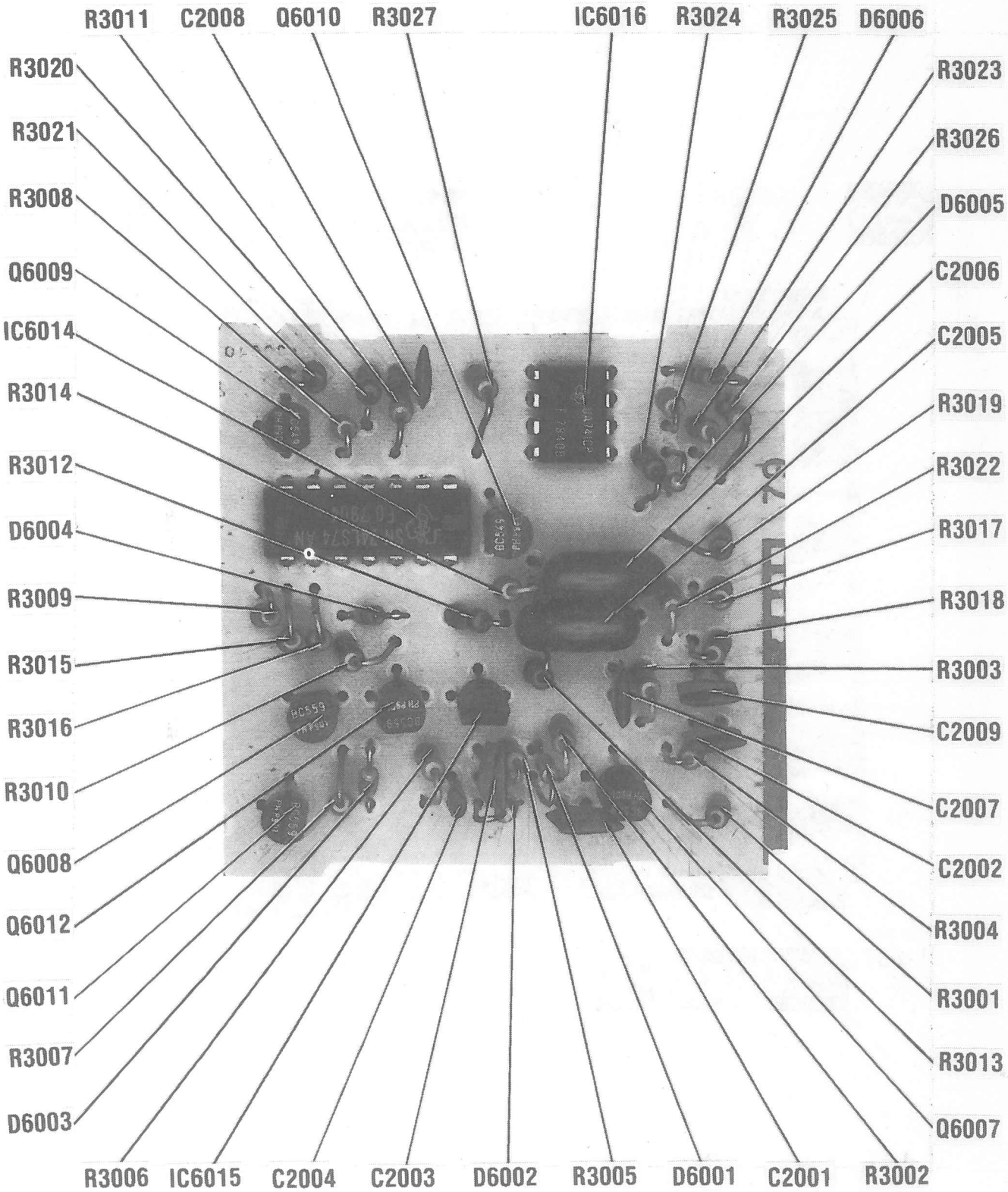

(U1691) MODE CONTROL MODULE



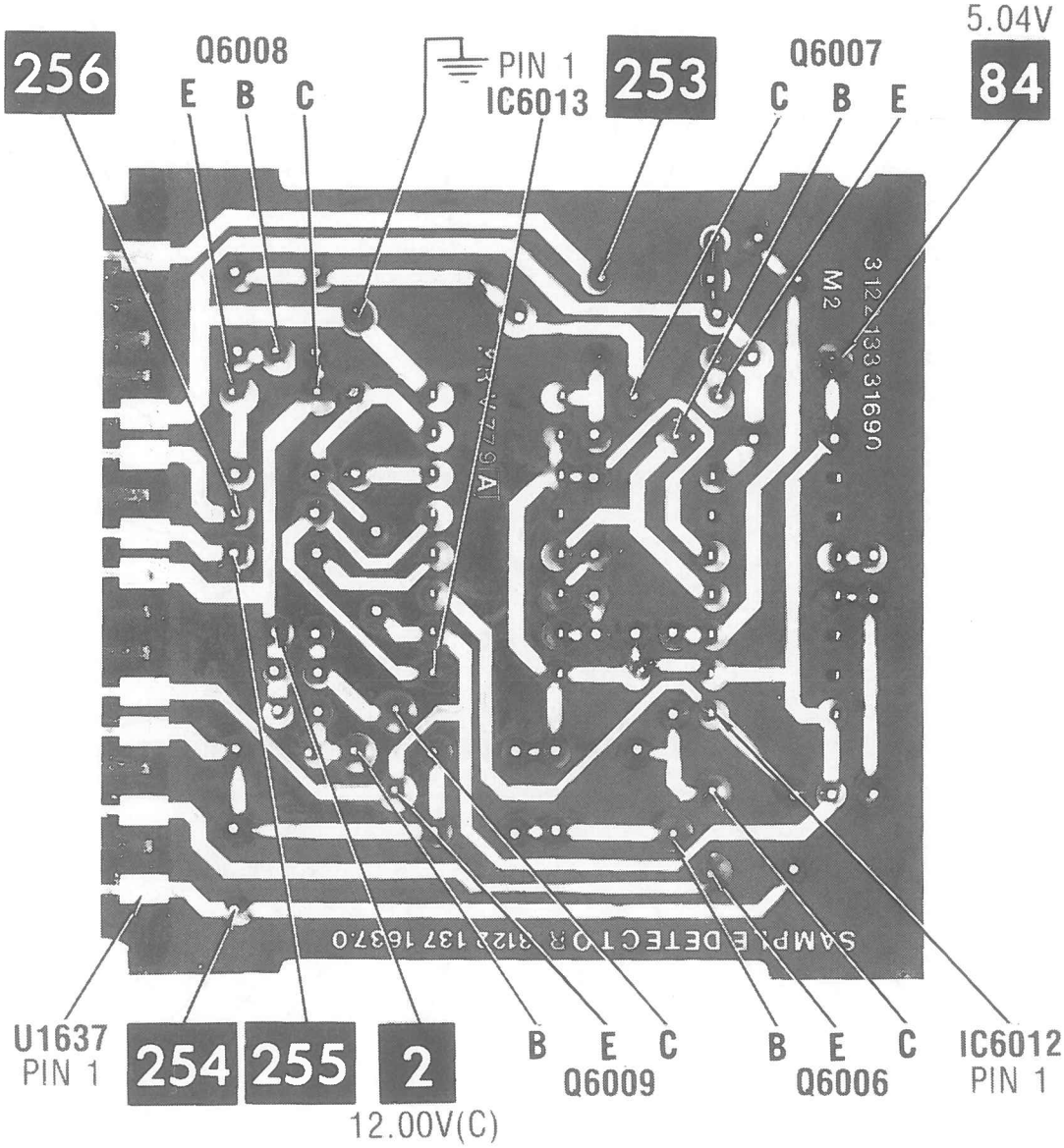

(U1691) MODE CONTROL MODULE



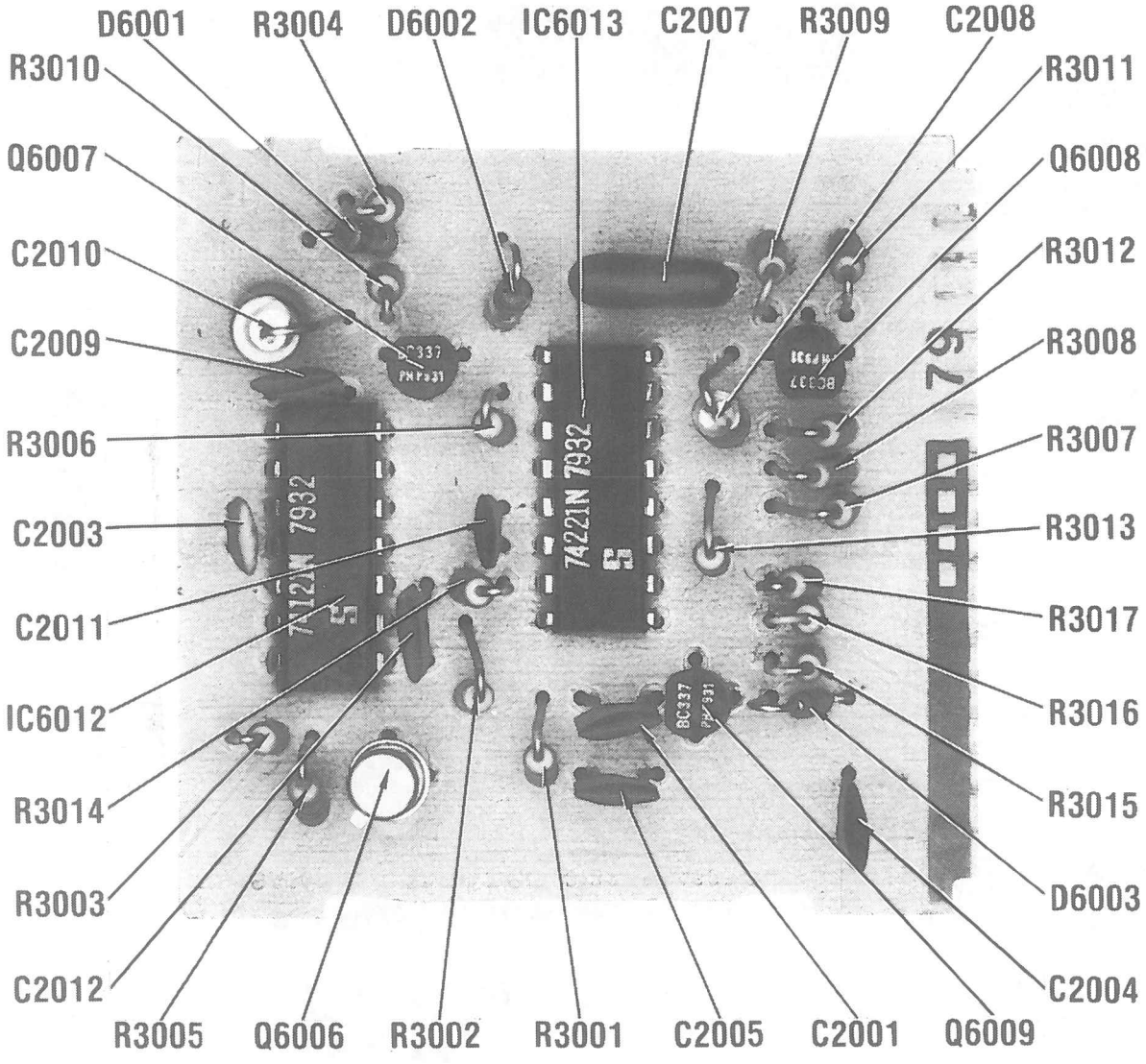

(U1036) SEARCH ADAPTER MODULE



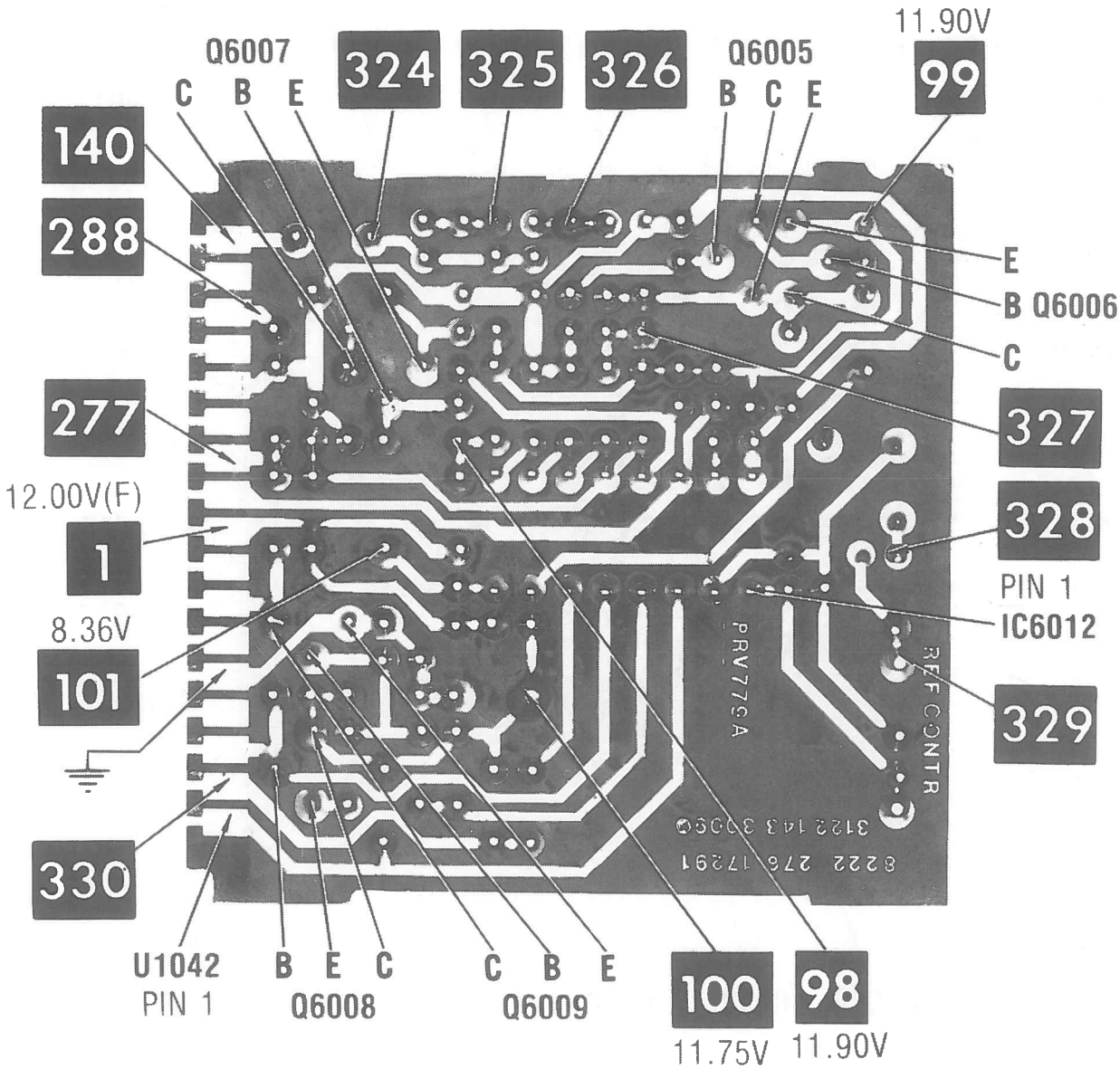

(U1036) SEARCH ADAPTER MODULE



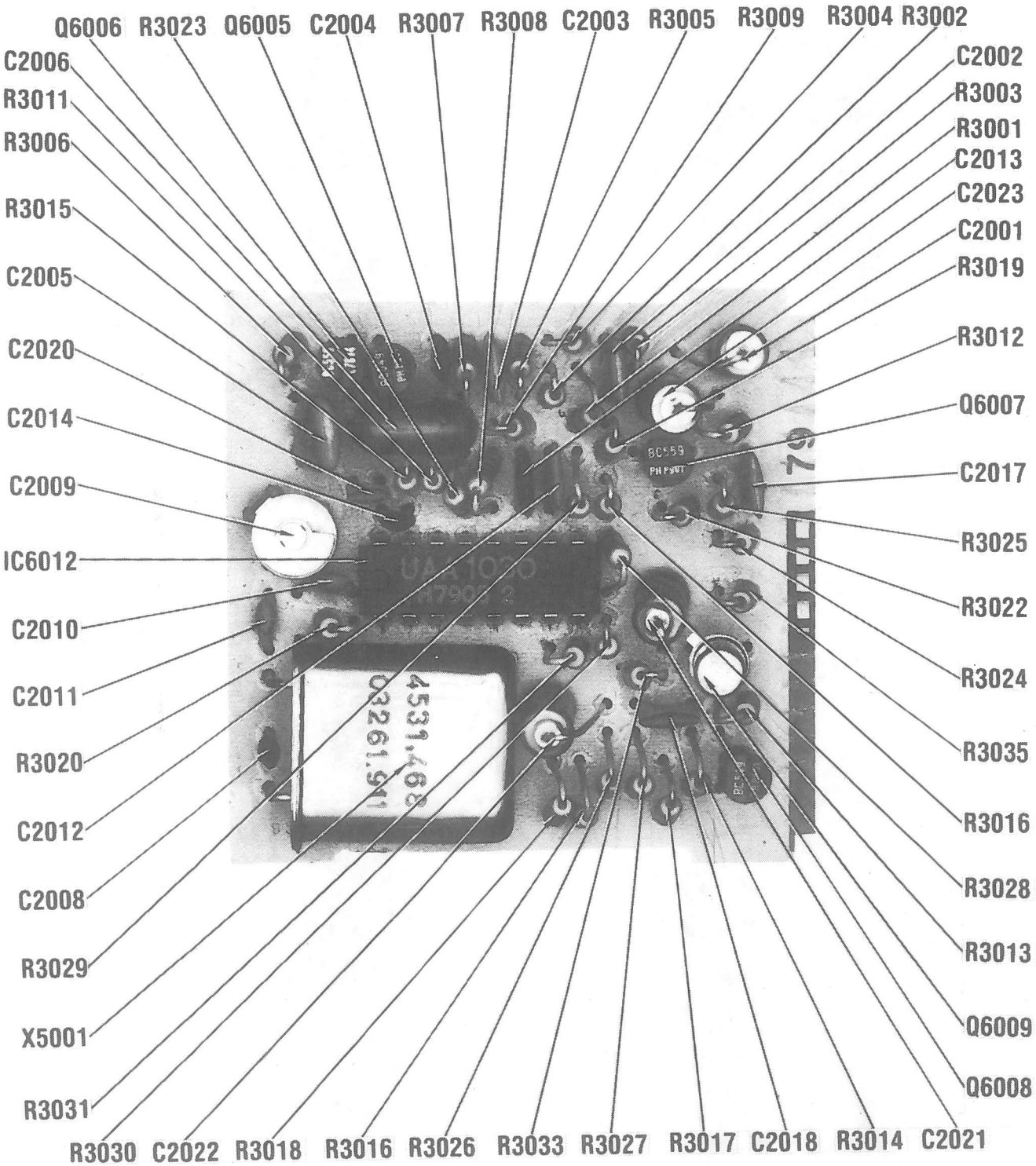

(U1637) SAMPLE DETECTOR MODULE



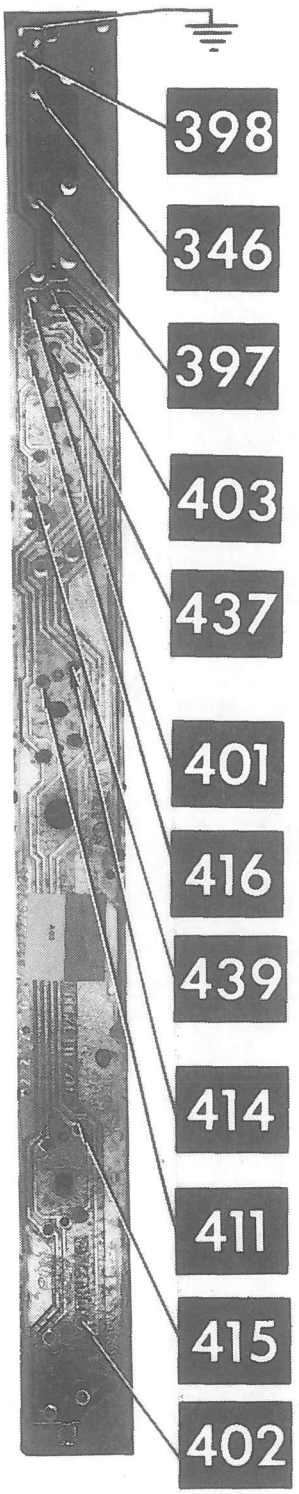

(U1637) SAMPLE DETECTOR MODULE

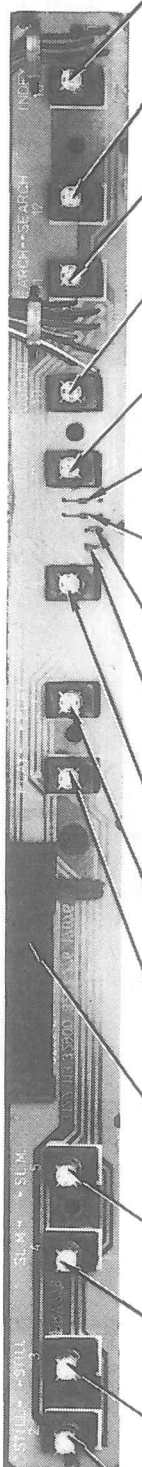



(U1042) REFERENCE CONTROL MODULE

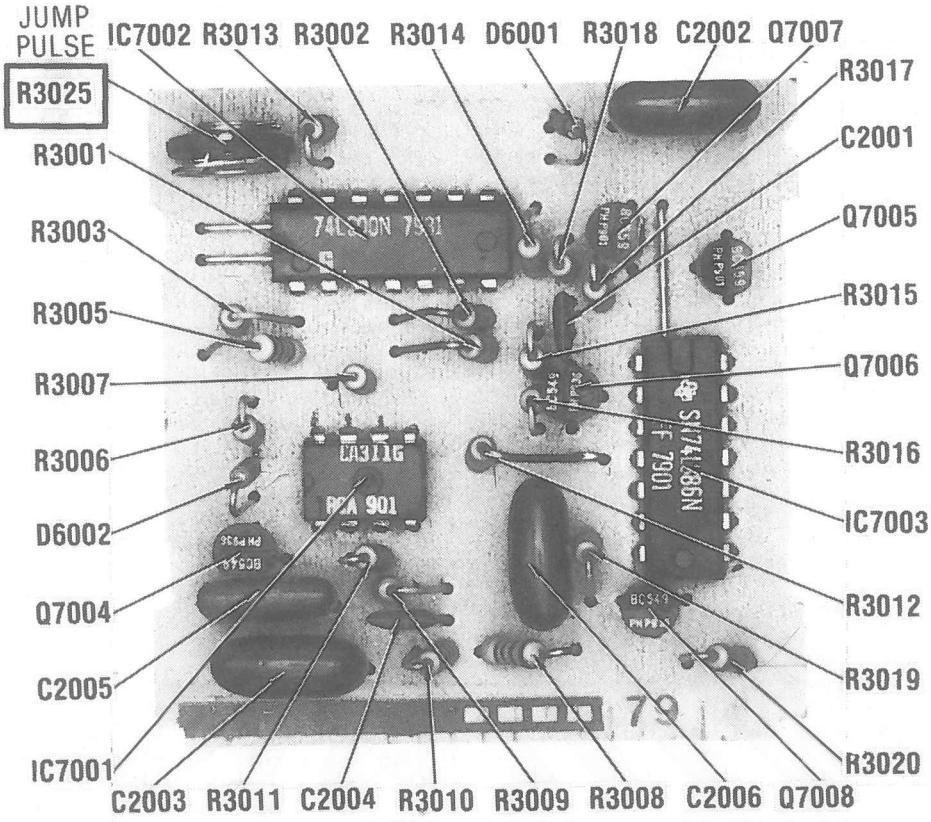


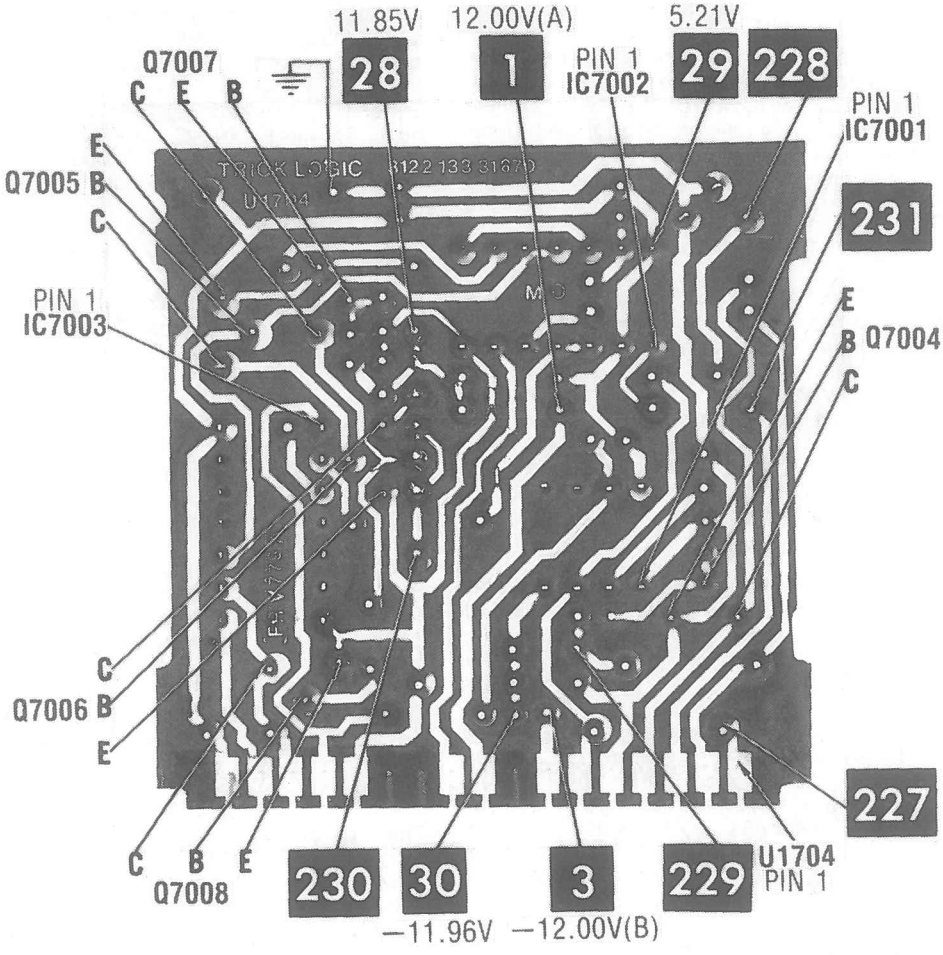

(U1042) REFERENCE CONTROL MODULE




SWITCH BOARD




(U1704) TRICK LOGIC MODULE

# MECHANICAL ADJUSTMENTS

## SLIDE DRIVE ASSEMBLY ADJUSTMENT

Place player facedown on a soft surface. Remove bottom and open the two main boards. Disengage the Slide Drive Motor (67) by moving the lever on the Motor Holder (63), towards the rear of player. Loosen two mounting Screws (110C). Move the Laser Slide Assembly (59), from side to side several times, through its entire lateral range. Place the Laser Slide Assembly in the middle of its range and tighten the two mounting screws. The Flat Tension Spring (68) provides the correct tension between the Slide Drive Rack (49) and the Pinion Gear (64). Move the Laser Slide Assembly through its entire range and check for binding. Readjust Slide Drive Assembly if any binding occurs. Engage Slide Drive Motor.

## SLIDE ASSEMBLY STOP ADJUSTMENT

This adjustment is factory set and usually needs no adjustment. If it becomes necessary to replace the Laser Slide Assembly, adjustment may be required. The Slide Stop determines how far the Objective Lens is allowed to move toward the inside diameter of a disc.

Remove one screw from rear of Top Left Panel and remove panel.

Turn player on, place disc on turntable, close lid and press Play button. After normal picture appears, loosen Slide Stop Adjust Screw (110A), press Search Forward button and search to outside of disc. The picture will mute and the Objective Lens (106) will return to the beginning of the disc automatically. Press the Still button immediately after the picture returns. Tighten the Slide Stop Adjust Screw. Check player for proper operation and replace Top Left Panel.

## LID SWITCH ADJUSTMENT

Place the player on its rear panel, turn Off power, remove bottom panel, and open the Power Supply Board. Open lid, then close lid until first latch is secured, lid should still be partially open. Loosen the Lid Switch Adjust Screw (110B), and adjust switch until its actuators are just touching the lid mechanism, (tab on Brake Lever (77)), tighten adjustment screw. Check for proper Lid Switch operation.

## STABILIZER RING REMOVAL

Unsnap the Decorative Ring (8), remove three Screws (93) and lift Stabilizer (Turntable) Ring Assembly (7) off motor spindle.

## TURNTABLE MOTOR REMOVAL

Remove Stabilizer Ring Assembly (7), (See STABILIZER RING REMOVAL), remove motor leads, disengage Slide Drive Motor (67) by moving lever on Slide Drive Motor Holder toward rear of player. Place Laser Slide Assembly (59) in the middle of its travel range. Remove four screws from base of Turntable Motor (69) and lift out motor.

Reverse above procedure to install motor.

## LASER SLIDE ASSEMBLY REMOVAL AND INSTALLATION

(REMOVAL)

Open player lid and unsnap Objective Lens Cover (24) and close lid. Place player facedown at a 45° angle, with control buttons at the bottom. Remove bottom panel and open Power Supply and Video/Servo boards. Remove one screw from the Wiring Harness (51) at the Laser Slide Assembly (59), remove Preamp Module. Disconnect all wires secured by harness at the Laser Slide Assembly and Preamp Module, lay wires and harness out of the way.

Remove the Slide Drive Assembly (60), from the Laser Slide Assembly, by unplugging two wires and removing three screws. Loosen the three Slide Rail Pressure Spring (92) locking screws and rotate Springs fully counterclockwise. Remove six screws from upper Slide Rail (81A) and remove Slide Rail. Remove Bearing Strip (34). Carefully lift top edge of Laser Slide Assembly and at the same time carefully separating the Objective Lens Assembly (106) from the sliding dust cover.

(INSTALLATION)

Place the lower Bearing Strip (34B) .25" from the right edge of the lower Slide Rail (81B). With the right side of the Laser Slide Assembly (59) against the Slide Stop (84), gently lay the lower edge against lower Slide Rail and Bearing Strip. Move the Laser Slide Assembly through its full range of travel, Bearing Strip should not protrude beyond end of Slide Rail or end of Laser Slide Assembly.

Carefully insert Objective Lens (106) through hole in dust cover. If Objective Lens and dust cover are not fitted properly binding of Laser Slide Assembly will occur.

Place right side of Laser Slide Assembly against Slide Stop (84), place upper Bearing Strip .25" from left edge of Laser Slide Assembly, making sure that the gear on Bearing Strip meshes with both the Laser Slide Assembly and the Bearing Strip Guide Rack (80A). Install upper Slide Rail (81A), install but do not tighten the six screws in upper Slide Rail. Move the Laser Slide Assembly all the way to the left, adjust Rail Pressure Springs (82) for equal pressure along the Slide Rail. Tighten the six Slide Rail screws. Check for binding of Laser Slide Assembly. If any binding occurs loosen the six upper Slide Rail screws and repeat adjustment procedure. Tighten six Slide Rail screws and check for binding. If satisfactory, rotate Pressure Springs (82) fully clockwise to lock position and tighten locking screws.

Reinstall Preamp Module, Wiring Harness, and reconnect all plugs. Reinstall Slide Drive Assembly (60), and perform adjustments (See SLIDE DRIVE ASSEMBLY ADJUSTMENT).

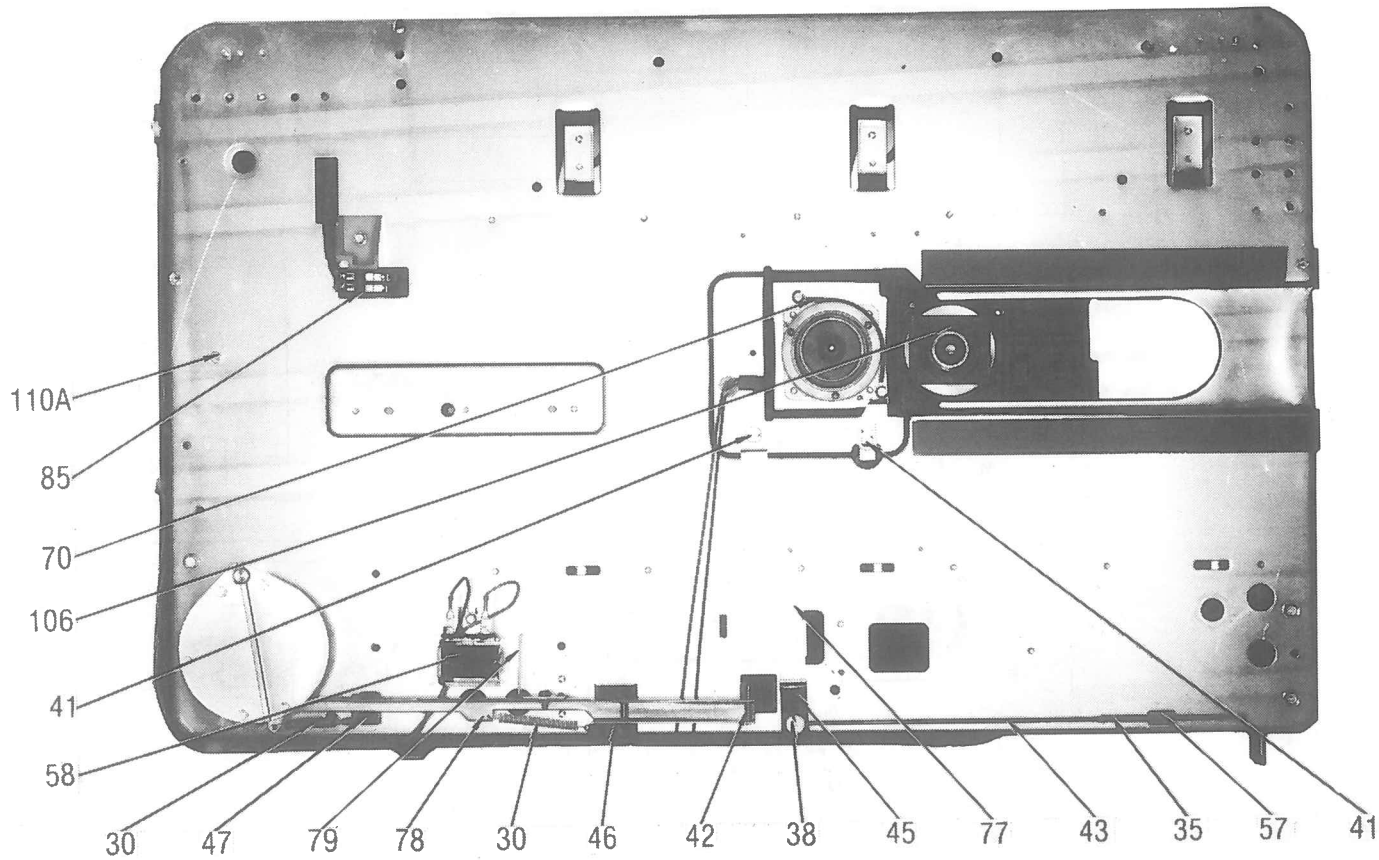
The following adjustments should be checked after replacement of a Laser Slide Assembly. Laser Current, Focus Gain, Radial Gain, Radial Limit, Tangential Gain, Jump Pulse, Motor Speed. See ELECTRICAL ADJUSTMENTS for checking and adjustment procedures.

## MECHANICAL PARTS LIST

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| 7 | 702568-2 | Turntable Ring Assembly |
| 8 | 144294-1 | Ornamental Ring |
| 24 | 143907-1 | Objective Lens Cover |
| 30 | 103294-1 | Spring, Tension |
| 31 | 103295-1 | Spring, Tension |
| 32 | 103296-1 | Spring, Flat Ejector |
| 34A | 144220-1 | Retainer Strip, Bearing |
| 34B | 144220-1 | Retainer Strip, bearing |
| 35 | 103229-1 | Spring, Compression |
| 37 | 103367-1 | Spring, Compression |
| 38 | 103368-1 | Shoulder Screw |
| 39 | 103393-1 | Ball Bearing (8 Used) |
| 40 | 103392-1 | Gear, Wheel (2 Used) |
| 41 | 110677-1 | Shoulder Screw, Brake Lever (2 Used) |
| 42 | 110679-1 | Limit Pin |
| 43 | 110680-2 | Spindle |
| 45 | 143896-1 | Bevel Block |
| 46 | 143897-1 | Guide Block |
| 47 | 143898-1 | Guide Block |
| 49 | 143900-1 | Nylon Rack, Slide Drive |
| 51 | 143903-1 | Wiring Harness (Swing Arm) |
| 57 | 144079-1 | Guide Block, Spindle |
| 58 | 702571-1 | Solenoid, Lid Lock |
| # 59 | 702573-1 | Laser Slide Assembly |
| 60 | 702574-1 | Slide Drive Assembly |
| 61 | 643987-1(1) | Belt, Slide Motor |
| 62 | 143996-1(1) | Pulley/Gear |

| REF. NO. | PART NO. | DESCRIPTION |
|---|---|---|
| 63 | 143997-2(1) | Holder Motor |
| 64 | 143998-1(1) | Gear, Pinion |
| 65 | 143999-1(1) | Base Plate, Slide Drive |
| 66 | 144000-1(1) | Retainer, Pinion Gear |
| 67 | E00246-2(1) | Motor, Slide |
| 68 | 733303-1 | Spring, Flat Tension |
| 69 | 702575-1 | Motor Assembly, Turntable |
| 70 | 702577-1 | Brake Band, Turntable |
| 77 | 733214-1 | Brake Lever |
| 78 | 733215-1 | Release Bracket, Lid |
| 79 | 733216-1 | Kick Plate, Lid Solenoid |
| 80A | 733218-1 | Guide Rack, Bearing Strip |
| 80B | 733218-1 | Guide Rack, Bearing Strip |
| 81A | 733219-1 | Laser Slide Rail |
| 81B | 733219-1 | Laser Slide Rail |
| 82 | 733220-1 | Pressure Spring, Rail (3 Used) |
| 84 | 733461-1 | Stop Bracket, Laser Slide |
| 85 | A60589-1 | Switch, Tangential (2 Used) |
| 86 | A60623-1 | Switch, Lid (2 Used) |
| 90 | 103425-1(2) | O Ring |
| 91 | 110702-1(2) | Ring, Turntable |
| 92 | 144295-1(2) | Ring, Centering |
| 93 | 103424-1(2) | Screw, Mounting |
| 95 | 103300-1 | Spring, Torsion |
| 106 | 702599-1 | Objective Lens Assembly |
| 110A | 103312-1308 | Adj. Screw, Laser Slide Top |
| 110B | 103312-1308 | Adj. Screw, Lid Switch |

# For SAFETY use only equivalent replacement part.
(1) Part of Slide Drive Assembly, Part Number 702574-1.
(2) Part of Turntable Ring Assembly, Part Number 702568-1.




**CHASSIS-TOP VIEW**

# TROUBLESHOOTING AIDS

SERVICING NOTES

Determine that the TV is operating properly.

Electrical and mechanical adjustments are given elsewhere and should be checked first before troubleshooting.

In order to quickly isolate the defective module, use the module flow chart and module location photo to take oscilloscope or voltmeter readings where indicated.

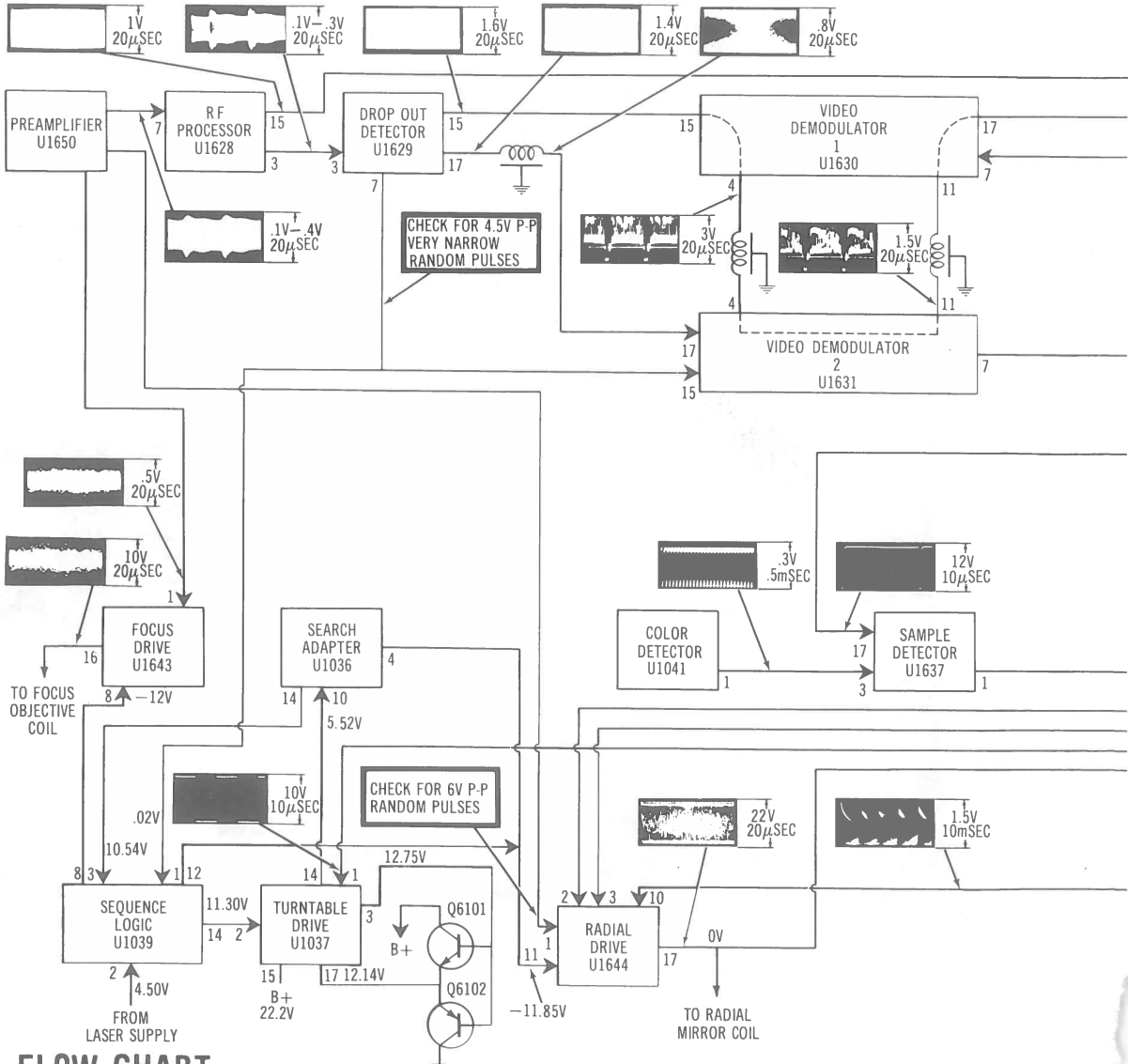
Waveform and voltage measurements taken in Play mode using standard disc.

A step by step troubleshooting chart for supplemental assist follows.

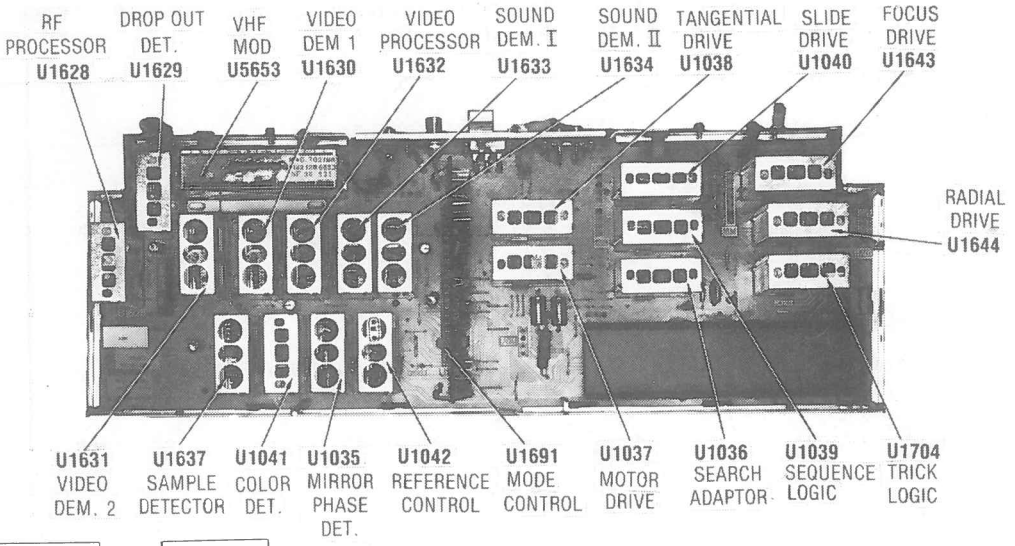
→ Indicates signal flow or control voltage application.

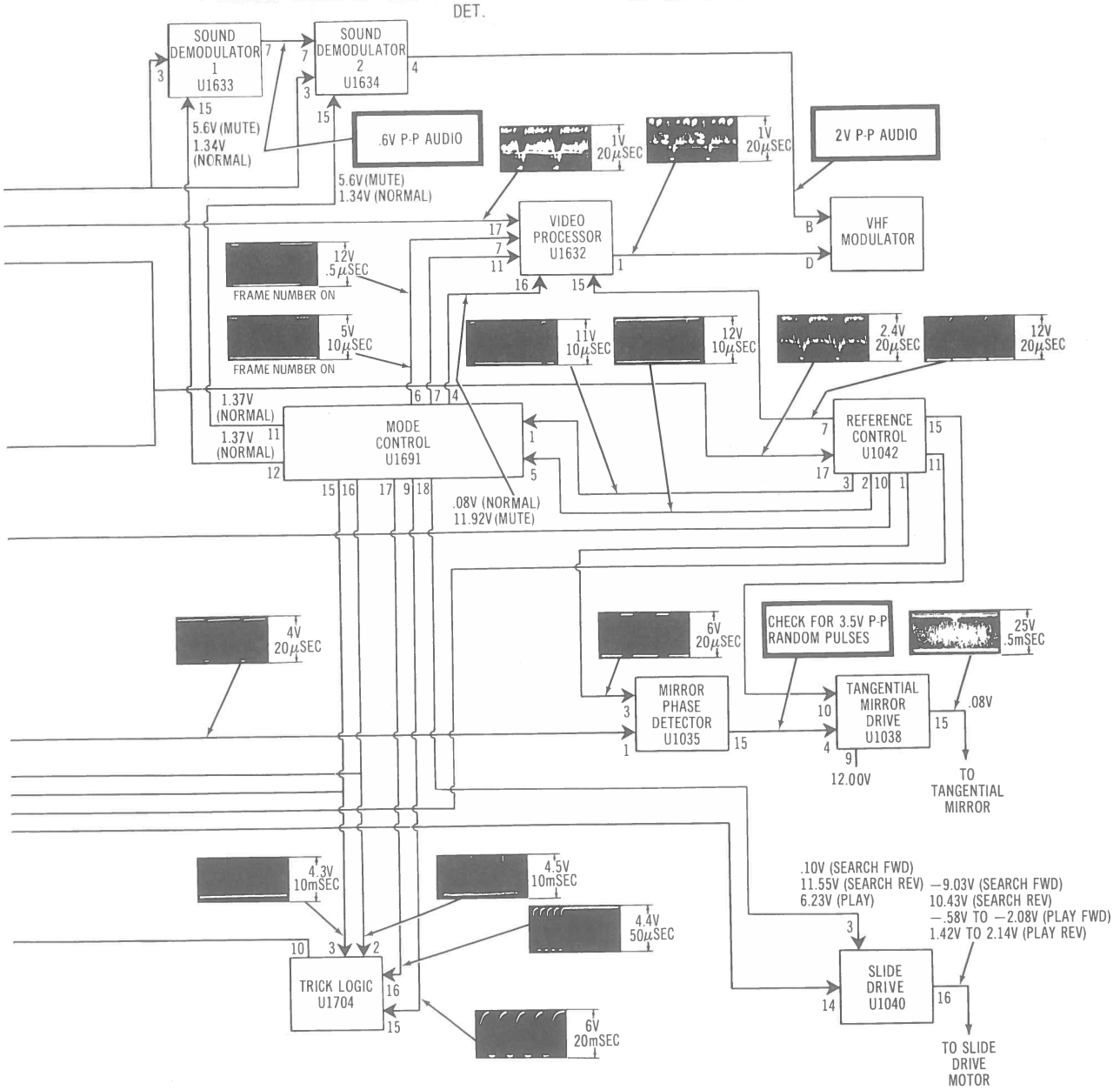
Schematics elsewhere in this manual show module components within broken line enclosures with module indentification.

CAUTION - DO NOT SHORT ACROSS OR CONNECT ANY EQUIPMENT ACROSS LASER TERMINALS. DOING SO WILL DESTROY Q1, Q7, Q9, Q14.
AVOID DIRECT EXPOSURE TO LASER BEAM.




## FLOW CHART


RF PROCESSOR U1628
DROP OUT DET. U1629
VHF MOD U5653
VIDEO DEM 1 U1630
VIDEO PROCESSOR U1632
SOUND DEM. I U1633
SOUND DEM. II U1634
TANGENTIAL DRIVE U1038
SLIDE DRIVE U1040
FOCUS DRIVE U1643
RADIAL DRIVE U1644
U1631 VIDEO DEM. 2
U1637 SAMPLE DETECTOR
U1041 COLOR DET.
U1035 MIRROR PHASE DET.
U1042 REFERENCE CONTROL
U1691 MODE CONTROL
U1037 MOTOR DRIVE
U1036 SEARCH ADAPTOR
U1039 SEQUENCE LOGIC
U1704 TRICK LOGIC


SOUND DEMODULATOR 1 U1633
SOUND DEMODULATOR 2 U1634
5.6V (MUTE) 1.34V (NORMAL)
.6V P-P AUDIO
1V 20μSEC
2V P-P AUDIO
VIDEO PROCESSOR U1632
VHF MODULATOR
12V .5μSEC
FRAME NUMBER ON
5V 10μSEC
11V 10μSEC
12V 10μSEC
2.4V 20μSEC
12V 20μSEC
1.37V (NORMAL)
MODE CONTROL U1691
REFERENCE CONTROL U1042
.08V (NORMAL) 11.92V (MUTE)
4V 20μSEC
6V 20μSEC
CHECK FOR 3.5V P-P RANDOM PULSES
25V .5mSEC
MIRROR PHASE DETECTOR U1035
TANGENTIAL MIRROR DRIVE U1038
.08V
12.00V
TO TANGENTIAL MIRROR
4.3V 10mSEC
4.5V 10mSEC
4.4V 50μSEC
6V 20mSEC
TRICK LOGIC U1704
.10V (SEARCH FWD) 11.55V (SEARCH REV) 6.23V (PLAY)
−9.03V (SEARCH FWD) 10.43V (SEARCH REV) −.58V TO −2.08V (PLAY FWD) 1.42V TO 2.14V (PLAY REV)
SLIDE DRIVE U1040
TO SLIDE DRIVE MOTOR

## FLOW CHART

## MODULE TROUBLESHOOTING CHART

Schematics show module components within broken line enclosures including module indentification. Measure voltages following steps in the order given for each symptom unless noted otherwise.

### NO PICTURE - NO SOUND

| | IF voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 2-U1042 | - - - - - - - - - - - - - - | Service U1042 |
| 2. | Pin 3-U1042 | Pin 2-U1042 | Service U1042 |
| 3. | - - - - - - | Pin 3-U1042 | Service U1691 |

### PICTURE WEAK, BLACK, OR MISSING

1. Ground pin 4 of U1691, If picture is restored - service U1691. If still no picture, remove ground and go to step 2 below.

| | If voltage missing at | IF voltage present at | Procedure |
|---|---|---|---|
| 2 | - - - - - - - - - - - - | Pin 17-U1630 | Go to step 7 below |
| 3. | Pin 17-U1630 | Pin 11-U1631 | Service U1630 |
| 4. | Pin 11-U1631 | Pin 4-U1630 | Service U1631 |
| 5. | Pin 4-U1630 | Pin 15-U1630 | Service U1630 |
| 6. | Pin 15-U1630 | - - - - - - | Service U1629 |
| 7. | - - - - - - | Pin 1-U1632 | Service VHF Modulator |
| 8. | Pin 1-U1632 | Pin 7-U1042 | Service U1632 |
| 9. | Pin 7-U1042 | Pin 17-U1042 | Service U1042 |
| 10. | Pin 17-U1042 | - - - - - - | Service U1631 |

### COLOR: LOSS OR STREAKING

1. Jumper pins 9 and 10 of U1038. If trouble eliminated, service U1042. If problem remains, go to step 2 below.

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 2. | - - - - - - - - - - - - | Pin 1-U1637 | Go to step 6 below |
| 3. | Pin 1-U1637 & 17-U1637 | - - - - - - | Service U1042 |
| 4. | Pin 3-U1637 | Pin 17-U1637 | Service U1041 |
| 5. | - - - - - - - - - - - - | Pin 3-U1637 | Service U1637 |
| 6. | Pin 15-U1035 | Pin 3-U1035 | Service U1035 |
| 7. | Pin 3-U1035 | - - - - - - | Service U1042 |
| 8. | Pin 15-U1038 | Pin 15-U1035 | Service U1038 |
| 9. | - - - - - - - - - - - - | Pin 15-U1038 | Check Tangential Mirror and Turntable Motor connections. Service Slide Ass'y. |

### PICTURE ERRATIC - SHAKES & SKIPS

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - - - - - - - - | Pin 11-U1644 | Go to step 5 below |
| 2. | Pin 11-U1644 Voltage wrong | - - - - - - | Remove U1039 |
| 3. | - - - - - - - - - - - - | Pin 11-U1644 Voltage correct | Service U1039 |
| 4. | Pin 11-U1644 Voltage still wrong | - - - - - - | Service U1036 |
| 5. | Pin 1-U1644 | - - - - - - | Service U1650 |
| 6. | Pin 17-U1644 | Pin 1-U1644 | Service U1644 |
| 7. | - - - - - - - - - - - - | Pin 17-U1644 | Service Slide Assembly |

## DROPOUTS IN PICTURE - EXCESSIVE

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - - - - - - - - | Pin 17-U1631 | Go to step 3 below |
| 2. | Pin 17-U1631 | - - - - - - - | Service U1629 |
| 3. | - - - - - - - - - - - - | Pin 7-U1629 | Service U1631 |
| 4. | Pin 7-U1629 | - - - - - - - | Service U1629 |

## NO PICTURE MUTE AT TURN ON

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 16-U1632 | - - - - - - - - - - - - | Service U1632 |
| 2. | - - - - - - - | Pin 16-U1632 | Ground Pin 1-U1632 |
| 3. | Picture mutes | - - - - - - - | Service U1632 |
| 4. | Picture doens't mute | - - - - - - - | Service VHF Modulator |

## NO SOUND

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - - - - - - - - | Pin 4-U1634 | Service VHF Modulator |
| 2. | Pin 4-U1634 | Pin 15-U1634 Wrong DC Volts | Service U1691 |
| 3. | Pin 15-U1628 | - - - - - - - - - | Service U1628 |

## SOUND DISTORTED

Remove U1633. If distortion disappears, service U1633. If distortion remains, service U1634 or VHF Modulator.

## NO SOUND MUTE AT TURN ON

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 15-U1633 or Pin 15-U1634 | - - - - - - - - - - - - | Service U1691 |
| 2. | - - - - - - - - - - - - | Pin 15-U1633 & Pin 15-U1634 | Remove U1633 |
| 3. | Sound mutes | - - - - - - - - - - - - | Service U1633 |
| 4. | Sound doens't mute | - - - - - - - - - - - - | Service U1634 |

## NO DISC ROTATION

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 15-U1037 | - - - - - | Check R3103, C2107, C2109, A06, P/J6, power supply |
| 2. | - - - - - | Pin 15-U1037 | Ground Pin 14-U1039 |
| 3. | No disc rotation - Remove ground and go to step 7 below | | |
| 4. | Dis rotates - Remove ground and to to step 5 below | | |
| 5. | - - - - - | Pin 1-U1039 | Service U1039 |
| 6. | Pin 1-U1039 | - - - - - | Service U1629 |
| 7. | Pin 3-U1037 | - - - - - | Check C2108, Service U1037 |
| 8. | Pin 17-U1037 | Pin 3-U1037 | Check Q6101, Q6102, R3104 |
| 9. | - - - - - | Pin 17-U1037 | Check switch SK14 & adjustment, motor M1 |

## PICTURE STOPS AND REPEATS

1. Check Pin 16-U1040 (-1V to -8V Play forward, +1V to +8V Play Reverse
2. If voltage OK, check A09 & A31 plug connections, service Slide Drive Assembly
3. If voltage not OK, service U1040

## SERVICE FORWARD - NONE OR IMPROPER

| | If voltage wrong | If voltage OK | Procedure |
|---|---|---|---|
| 1. | - - - - - | - - - - - | Ground Pin 3-A03 on U1691 |
| 2. | Search now normal | - - - - - | Check Switch Board, Switch SK12. A03 connections |
| 3. | Search still incorrect | Pin 16-U1040 | Check A09, A31, service Slide Drive Assembly |
| 4. | Pin 16-U1040 | Pin 3-U1040 | Service U1040 |
| 5. | Pin 3-U1040 | - - - - - | Service U1691 |

## SEARCH REVERSE - NONE OR IMPROPER

| | If voltage wrong | If voltage OK | Procedure |
|---|---|---|---|
| 1. | - - - - - | - - - - - | Ground Pin 4-A03 on U1691 |
| 2. | Search now normal | - - - - - | Check Switch Board, Switch SK11 A03 connections |
| 3. | Search still incorrect | Pin 16-U1040 | Check A09 & A31 connections, service Slide Drive Assembly |
| 4. | Pin 16-U1040 | Pin 3-U1040 | Service U1040 |
| 5. | Pin 3-U1040 | - - - - - | Service U1691 |

## INDEX - NUMBERS OK - BACKGROUND MISSING

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 11-U1632 | - - - - - | Service U1691 |
| 2. | - - - - - | Pin 11-U1632 | Service U1632 |

## INDEX - NUMBERS MISSING - BACKGROUND OK

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 7-U1632 | - - - - - | Service U1691 |
| 2. | - - - - - | Pin 7, U1632 | Service U1632 |

## INDEX - NUMBERS AND BACKGROUND MISSING

1. Check Switch SK13, A03 connections, service U1691

## TRICKS - ERRATIC - NONE - SKIPS

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - | - - - - - | Press Play Reverse button |
| 2. | Pin 15-U1704 | - - - - - | Service U1691 |
| 3. | Pin 2-U1704 | Pin 15-U1704 | Service U1691 |
| 4. | Pin 10-U1704 | Pin 2-U1704 | Service U1704 |
| 5. | Pin 16-U1704 | Pin 10-U1704 | Service U1704 |
| 6. | Pin 3-U1704 | Pin 16-U1704 | Service U1691 |
| 7. | - - - - - | Pin 3-U1704 | Service U1644 |

## FOCUS - OBJECTIVE LENS DOES NOT RISE TO FOCUS POSITION

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - | Pin 2-U1039 | Go to step 4 |
| 2. | Pin 2-U1039 | TP5 on power supply board | Check D4 & R26 on power supply board |
| 3. | TP5 on power supply board | - - - - - | Service laser supply |
| 4. | - - - - - | Pin 3-U1039 | Go to step 7 below |
| 5. | Pin 3-U1039 | Pin 10-U1036 (Voltage varies with motor speed) | Service U1036 |
| 6. | Pin 10-U1036 | - - - - - | Service U1037 |
| 7. | Pin 8-U1643 | - - - - - | Service U1039 |
| 8. | Pin 16-U1643 | Pin 8-U1643 | Service U1643 |
| 9. | Objective lens not moving | Pin 16-U1643 | Check for binding, objective coil, plugs A07 & A31 |

## FOCUS - OBJECTIVE LENS SEARCHING FOR FOCUS

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 7-U1628 | - - - - - | Go to step 6 below |
| 2. | Pin 3-U1628 | Pin 7-U1628 | Service U1628 |
| 3. | - - - - - | Pin 3-U1628 | Ground Pin 1-U1039 |
| 4. | Focus attained | - - - - - | Service U1629 |
| 5. | Focus not attained | - - - - - | Service U1039 |
| 6. | Pin 1-U1643 | - - - - - | Go to step 9 below |
| 7. | Pin 16-U1643 | Pin 1-U1643 | Service U1643 |
| 8. | - - - - - | Pin 16-U1643 | Service U1650 or Slide Assembly |
| 9. | Pin 1-U1643 | - - - - - | Check for approx. 0V on Pin 15-U1038 |
| 10 | - - - - - | Pin 15-U1038 | Service U1038 |
| 11. | Pin 15-U1038 | - - - - - | Check for approx. 0V on Pin 17-U1644 |
| 12. | - - - - - | Pin 17-U1644 | Service U1644 |
| 13. | Pin 17-U1644 | - - - - - | Service U1650, U1643, or Slide Assembly |

## RADIAL TRACKING - UNSTABLE PICTURE - GARBLED SOUND

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | - - - - - | Pin 11-U1644 | Go to step 5 below |
| 2. | Pin 11-U1644 (Wrong volts) | - - - - - | Remove U1039 |
| 3. | - - - - - | Pin 11-U1644 (Volts correct) | Service U1039 |
| 4. | Pin 11-U1644 (Still wrong volts) | - - - - - | Service U1036 |
| 5. | Pin 1-U1644 | - - - - - | Service U1650 |
| 6. | Pin 17-U1644 | Pin 1-U1644 | Service U1644 |
| 7. | - - - - - | Pin 17-U1644 | Check connections at A08, A32, A34, service Slide Assembly |

TURNTABLE MOTOR - HORIZ JITTER - LOSS OF SYNC

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1. | Pin 2-U1037 | - - - - - | Service U1039 |
| 2. | Pin 3-U1037 (Voltage does vary 0V-15V) | Pin 2-U1037 | Check Q6101, Q6102, service U1037 |
| 3. | Pin 1-U1037 | Pin 3-U1037 (Varies 0V-15V) | Service U1042 |
| 4. | - - - - - | Pin 1-U1037 | Service U1037 |

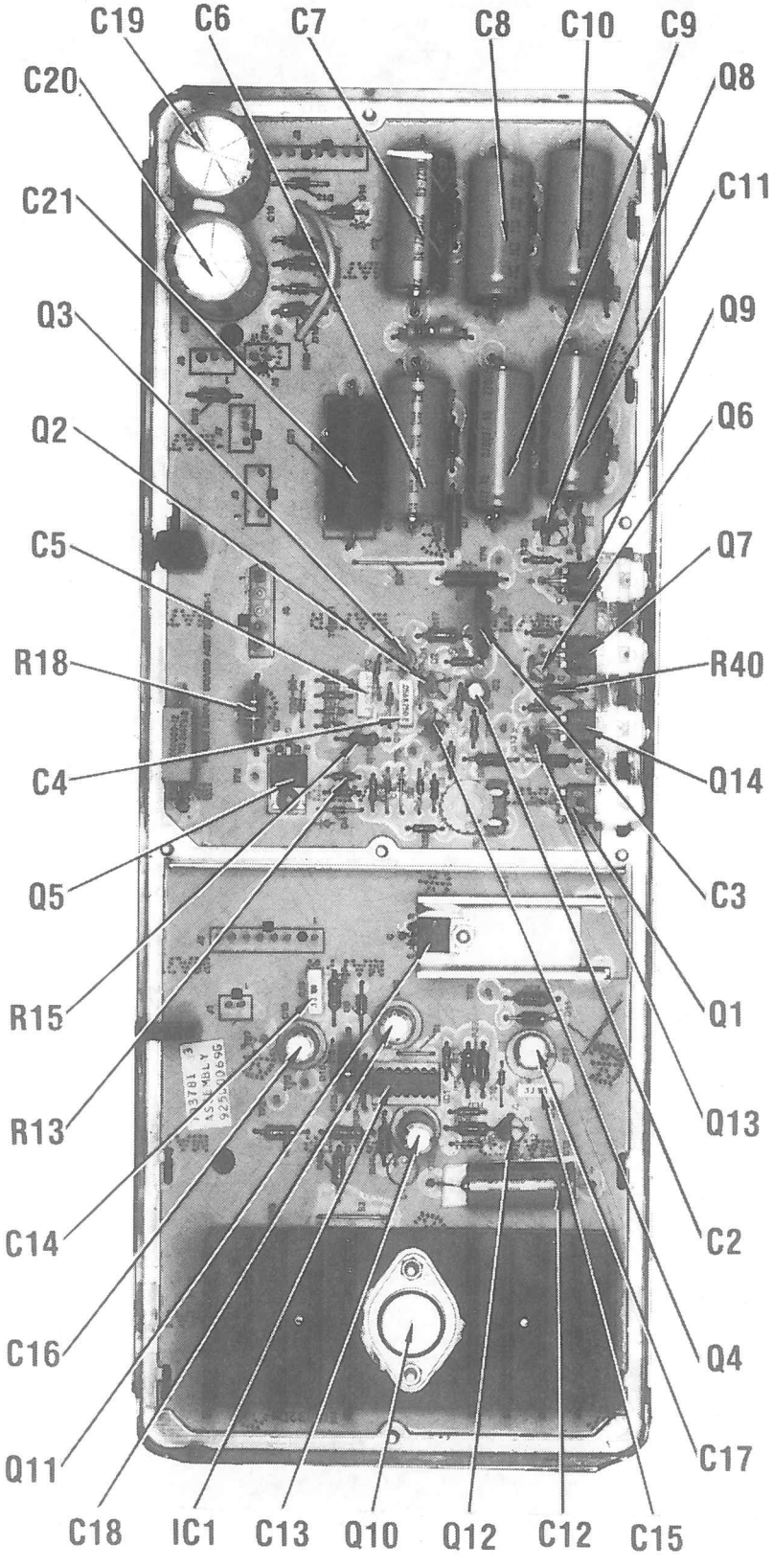
POWER SUPPLY (Refer to schematic and photo's)

| | If voltage missing at | If voltage present at | Procecure |
|---|---|---|---|
| 1. | TP2 & TP3 | - - - - - | Check D15 thru D18, F1, SK1, T1, C12, C20, P/J2 |
| 2. | TP7 & TP8 | - - - - - | Check for shorted B+/B- lines, IC1, Q10, Q11, Q12 |
| 3. | TP1 (Turntable doesn't run) | - - - - - | Check D13, D14, R45, C19, P/J6 |

LASER SUPPLY (Refer to schematic and photo's)

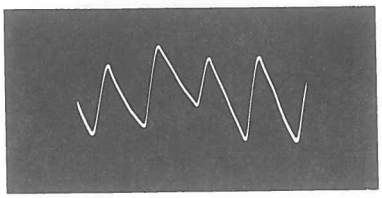
CAUTION - DO NOT SHORT ACROSS OR CONNECT ANY EQUIPMENT ACROSS LASER TERMINALS. DOING SO WILL DESTROY Q1, Q7, Q9, Q14.

| | If voltage missing at | If voltage present at | Procedure |
|---|---|---|---|
| 1 | TP5 | - - - - - | Check peak to peak voltage at TP6 |
| 2. | - - - - - | TP6 (Peak to peak) | Go to step 6 below |
| 3. | TP6 (Peak to peak) | Pin 1-P/J1 | Check Q2, Q3, Q4, Q5 |
| 4. | Pin 1-P/J1 | - - - - - | Check Lid Switch adjustment, Lid Switch SK14, connections at Pins 1 & 2-P/J1 |
| 5. | Q5 emitter | - - - - - | Check Lid Switch adjustment, Lid Switch SK14, P/J1 |
| 6. | Q1 base (No or low voltage) | - - - - - | Check Q1, Z1, D5, D6, R1, R25 |
| 7. | Pin 1-J5 (CAUTION - HIGH VOLTAGE) | Q1 base | Check D7, D8, T1, C6 thru C11 |
| 8. | - - - - - | Pin 1-J5 (CAUTION - HIGH VOLTAGE) | Check Q1, Q6, Q7, Q8, Q9, Q13, Q14 |



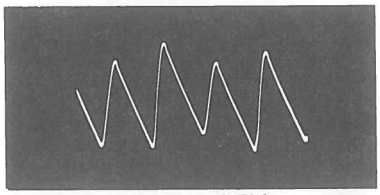

POWER SUPPLY BOARD

Waveform 1



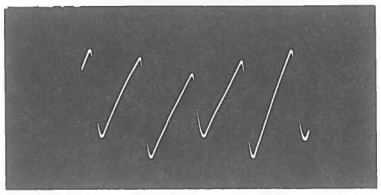
5mSec 1.4V

Waveform 2



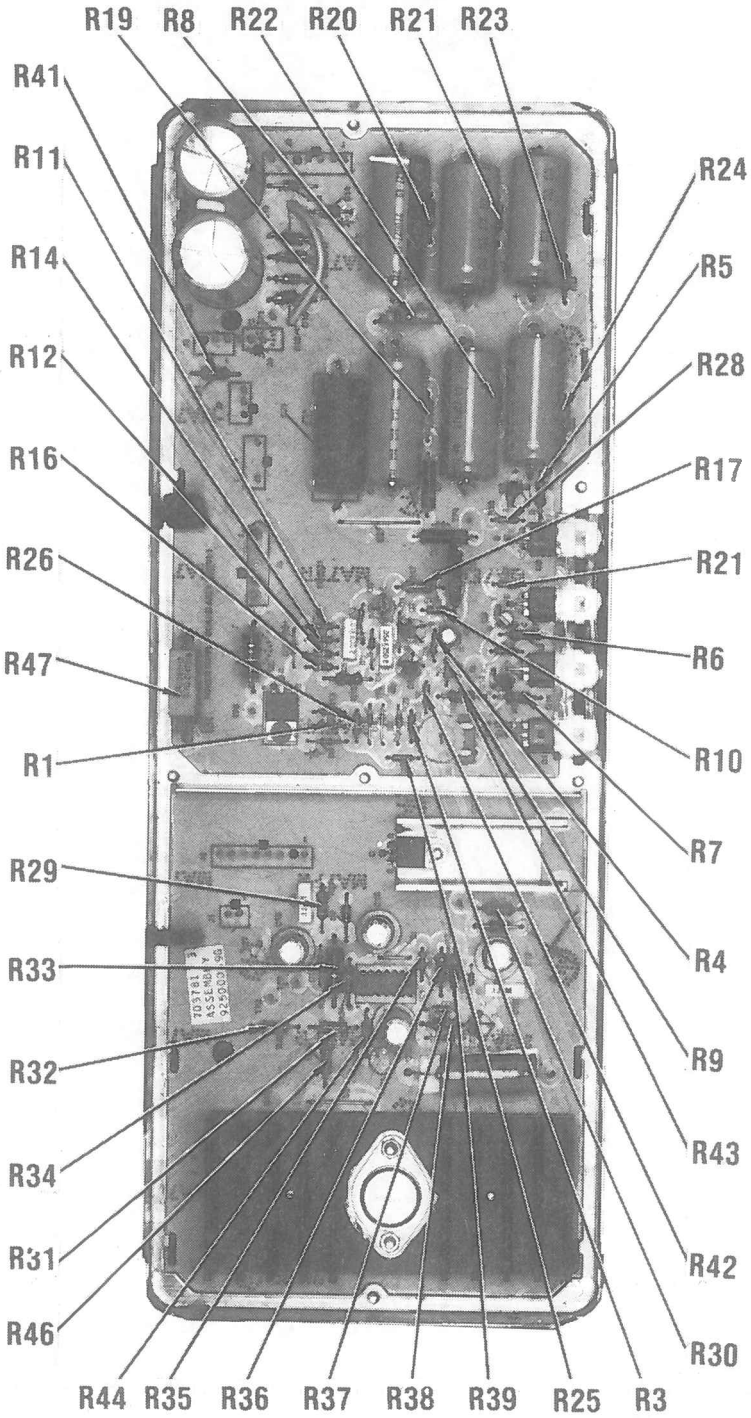
5mSec 1.5V

Waveform 3

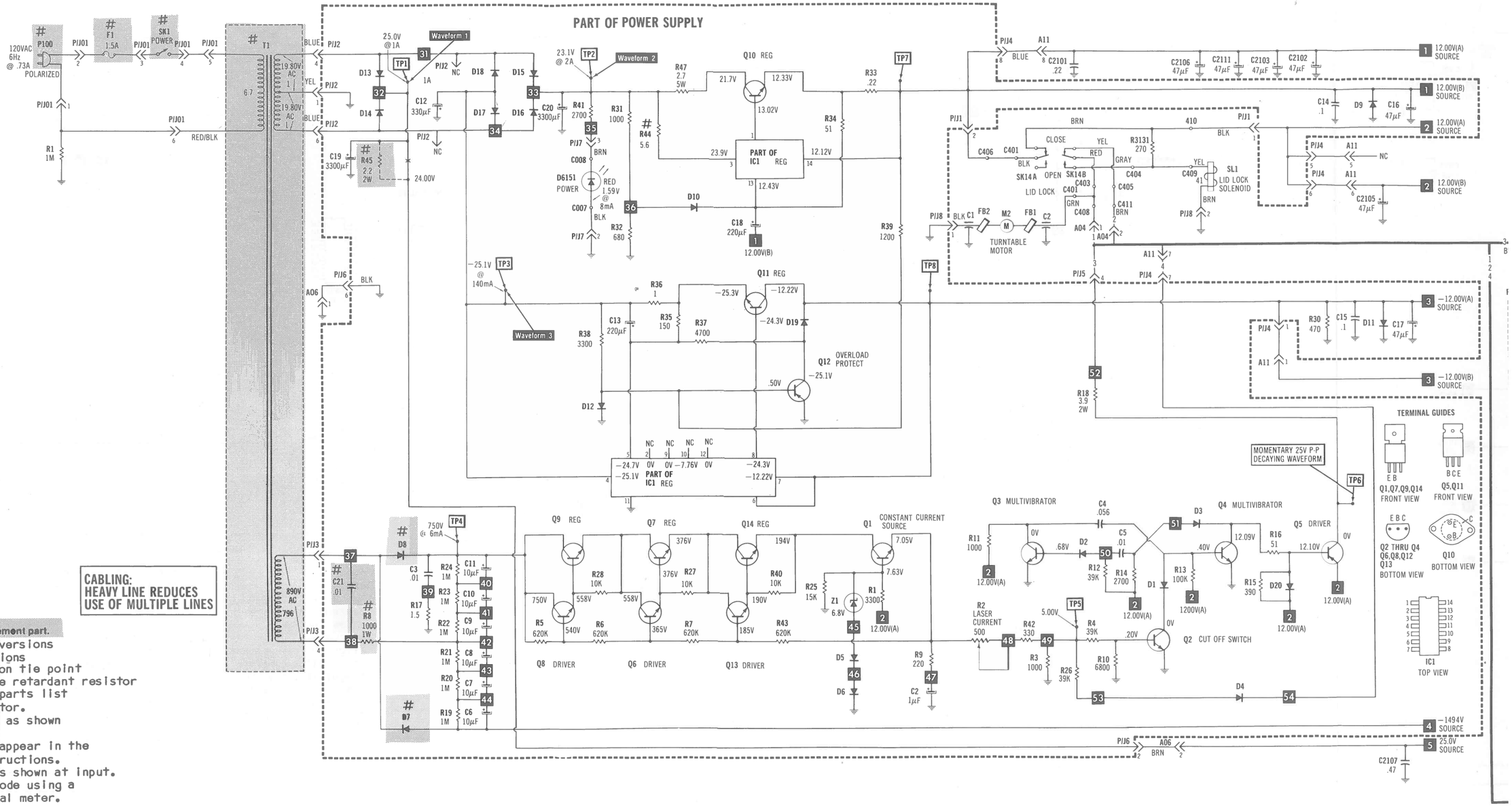


5mSec 3.4V

TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.




POWER SUPPLY BOARD




# For SAFETY use only equivalent replacement part.

- Circuitry not used in some versions
- Circuitry used in some versions
- Nominal value
- Common tie point
- Ground
- Flame retardant resistor
- Chassis
- See parts list
- ▲ Taken with bar sweep generator.

Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE™

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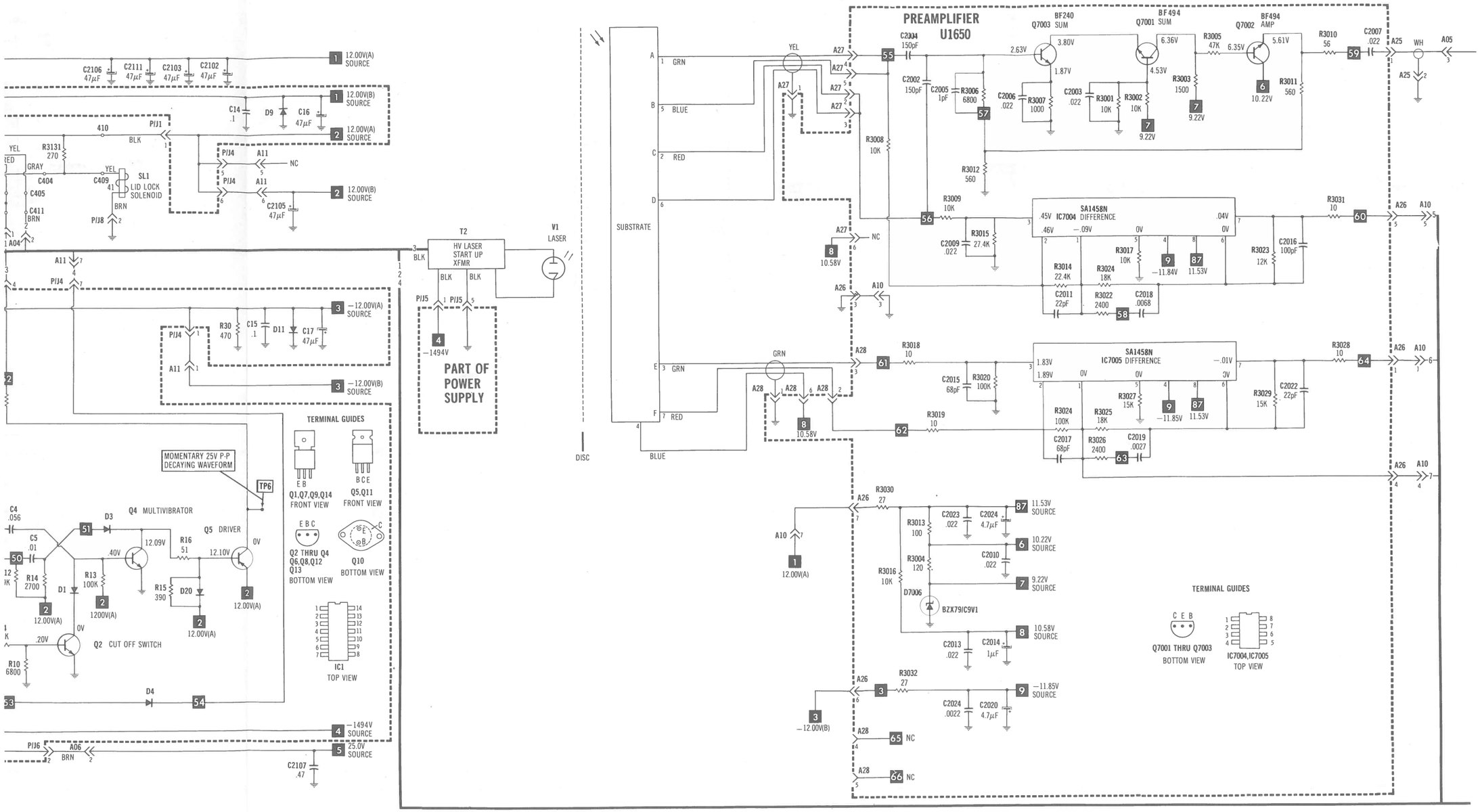
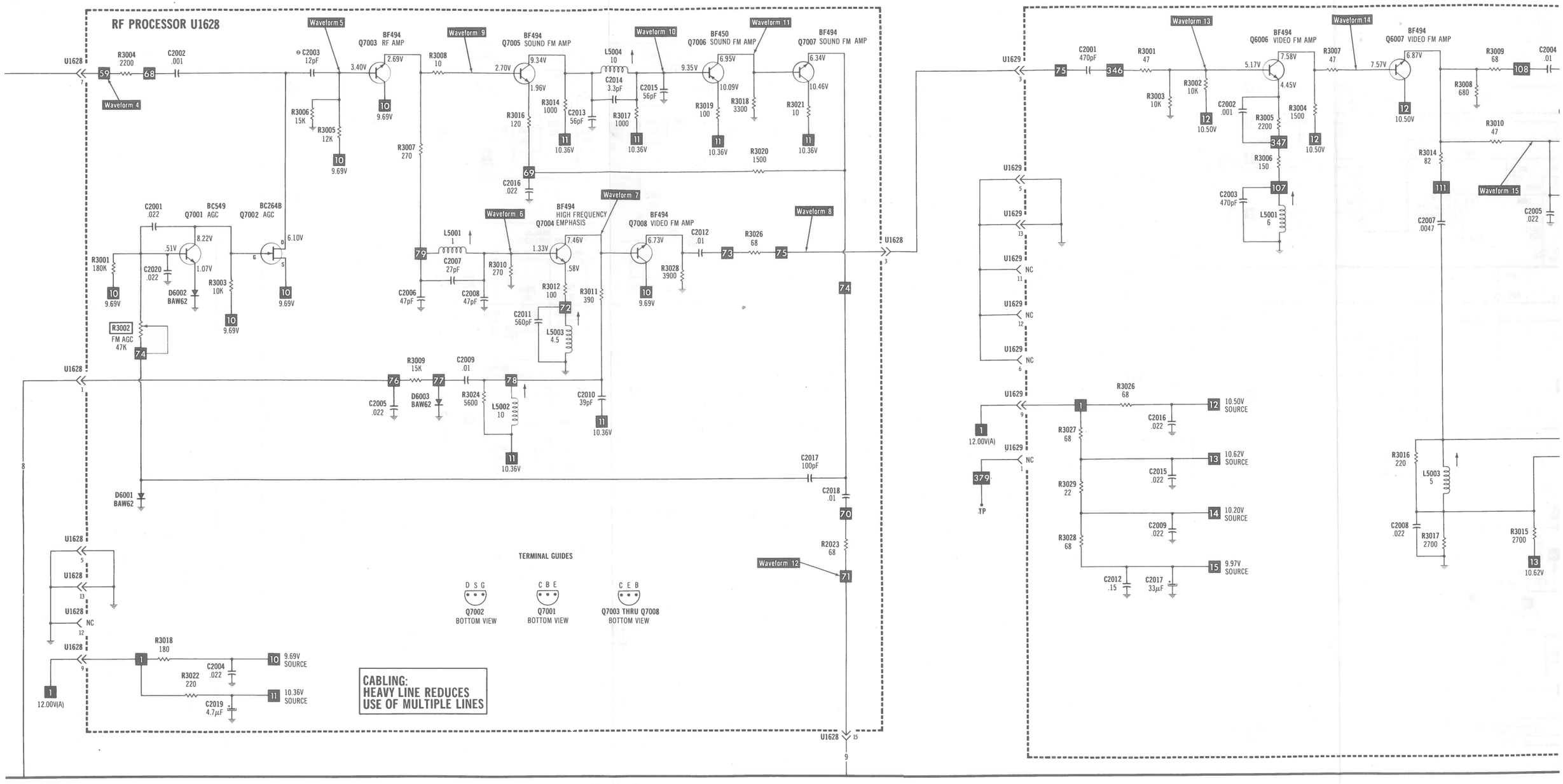
## POWER SUPPLY / PREAMP


PREAMPLIFIER
U1650
SUBSTRATE
DISC
PART OF POWER SUPPLY
HV LASER START UP XFMR
T2
V1 LASER
LID LOCK SOLENOID
SL1
Q4 MULTIVIBRATOR
Q5 DRIVER
Q2 CUT OFF SWITCH
MOMENTARY 25V P-P DECAYING WAVEFORM
TP6
TERMINAL GUIDES
Q1,Q7,Q9,Q14 FRONT VIEW
Q5,Q11 FRONT VIEW
Q2 THRU Q4 Q6,Q8,Q12 Q13 BOTTOM VIEW
Q10 BOTTOM VIEW
IC1 TOP VIEW
Q7001 THRU Q7003 BOTTOM VIEW
IC7004,IC7005 TOP VIEW
IC7004 SA1458N DIFFERENCE
IC7005 SA1458N DIFFERENCE
Q7003 BF240 SUM
Q7001 BF494 SUM
Q7002 BF494 AMP
D7006 BZX79/C9V1
12.00V(A) SOURCE
12.00V(B) SOURCE
−12.00V(A) SOURCE
−12.00V(B) SOURCE
−1494V SOURCE
25.0V SOURCE
11.53V SOURCE
10.22V SOURCE
9.22V SOURCE
10.58V SOURCE
−11.85V SOURCE
NC




A PHOTOFACT STANDARD NOTATION SCHEMATIC
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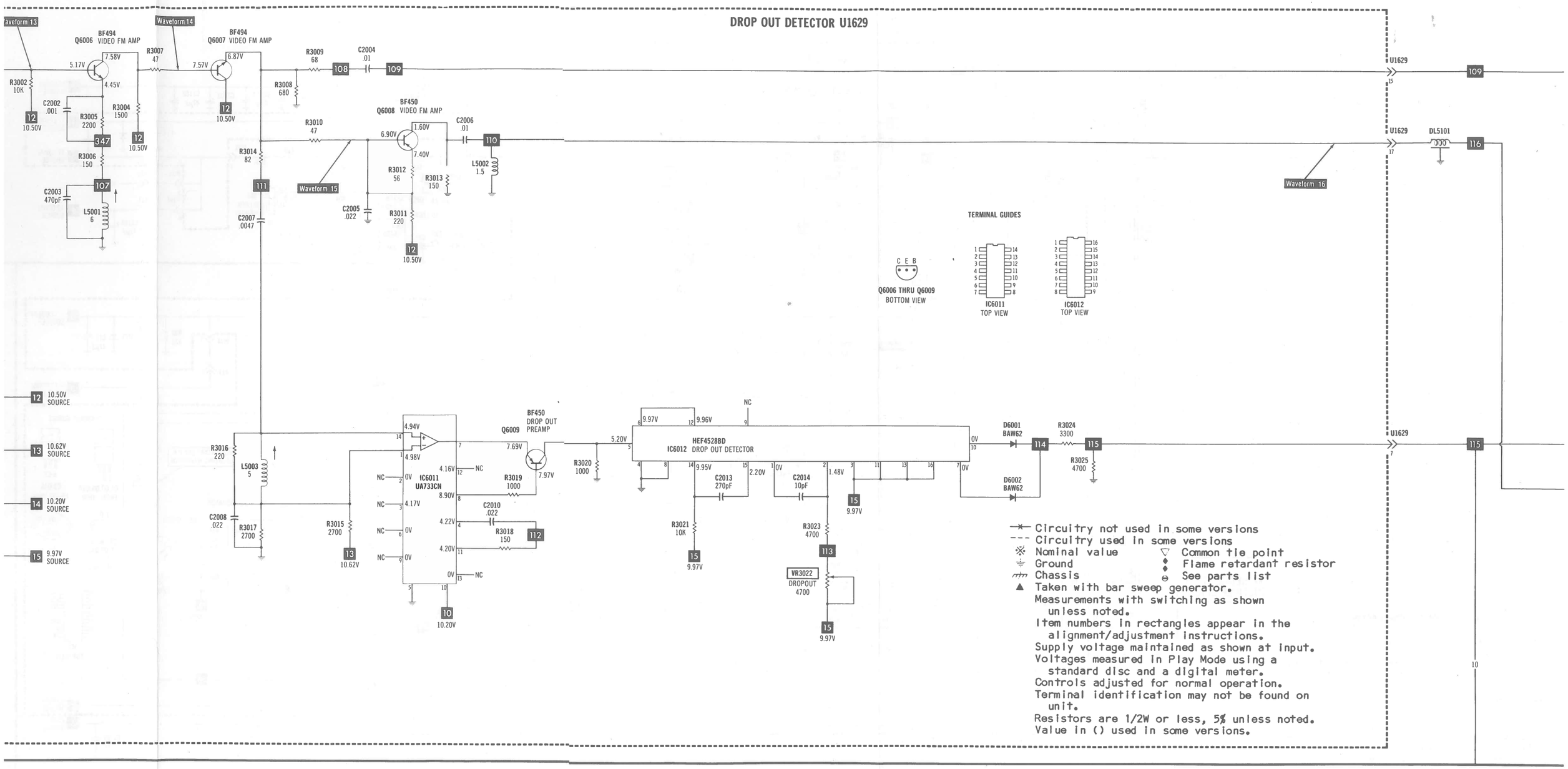
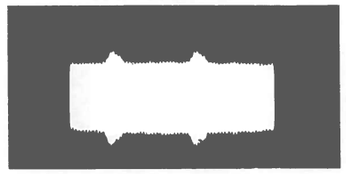



## DROP OUT DETECTOR/RF PROCESSOR

Waveform 4

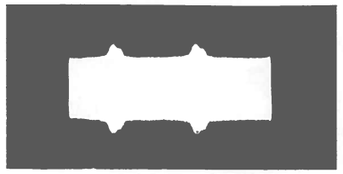
20μSec 0.3V

Waveform 5



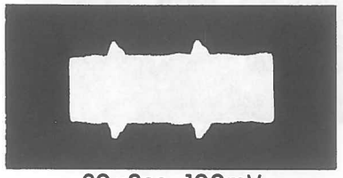
20μSec 20mV

Waveform 6



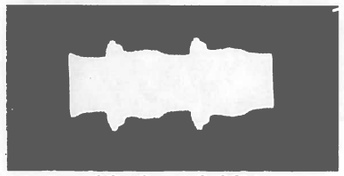
20μSec 40mV

Waveform 7



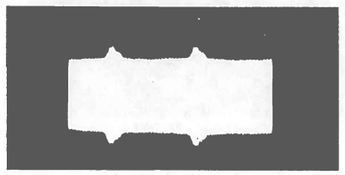
20μSec 100mV

Waveform 8



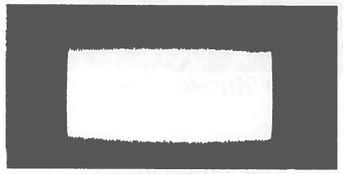
20μSec 0.26V

Waveform 9



20μSec 100mV

Waveform 10

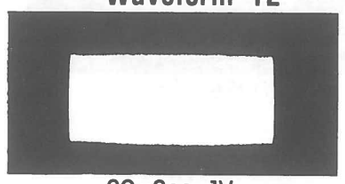


20μSec 100mV

Waveform 11

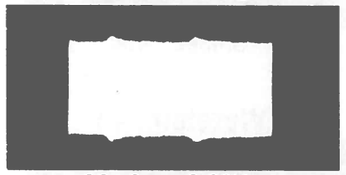
20μSec 0.5V

Waveform 12



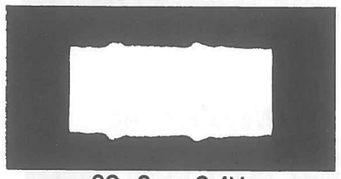
20μSec 1V

Waveform 13



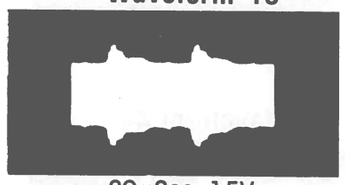
20μSec 0.22V

Waveform 14



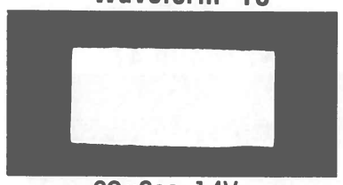
20μSec 0.4V

Waveform 15



20μSec 1.5V

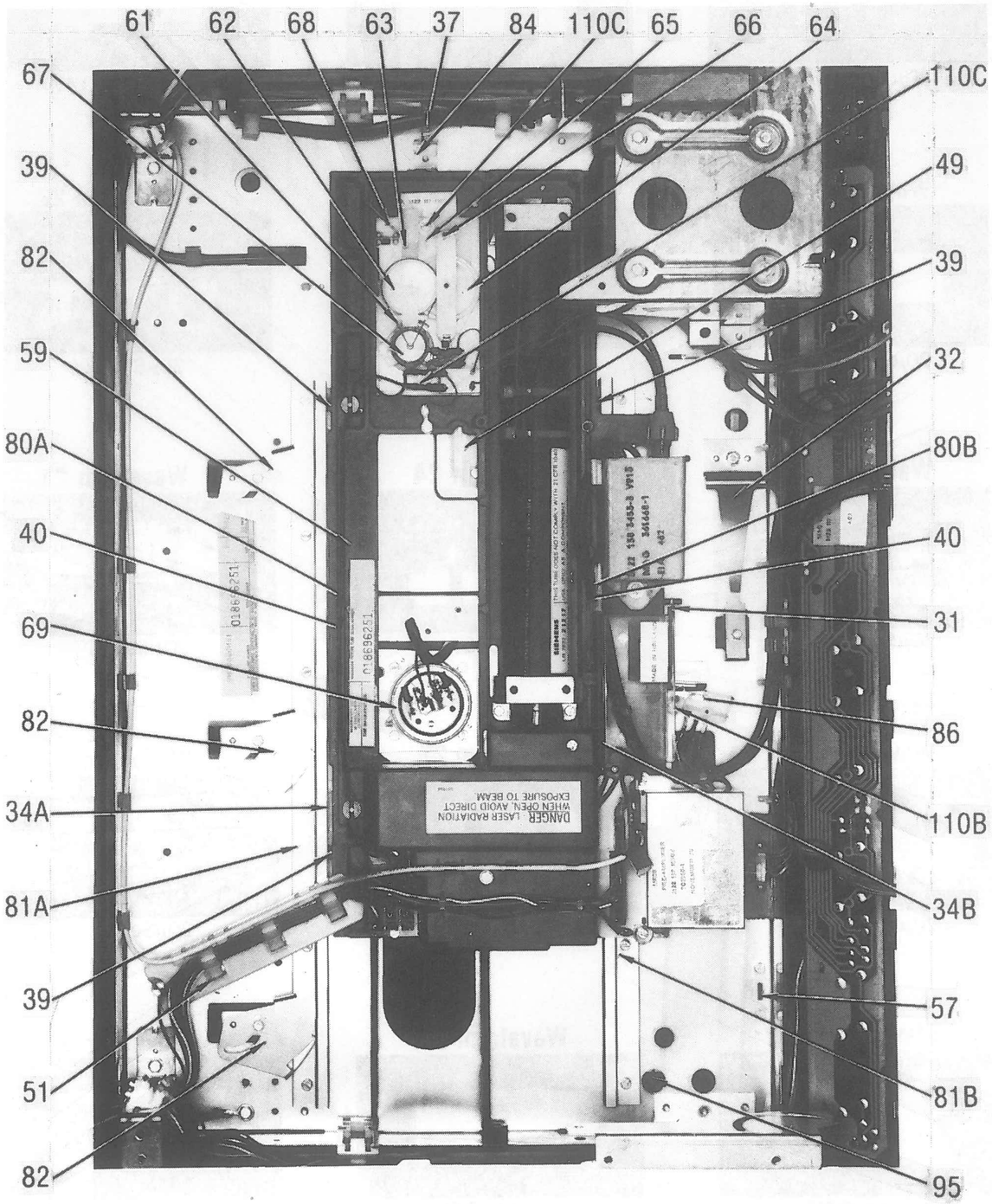
Waveform 16



20μSec 1.4V

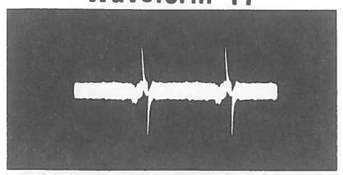
TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.





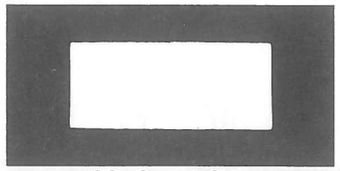

CHASSIS-BOTTOM VIEW

Waveform 17



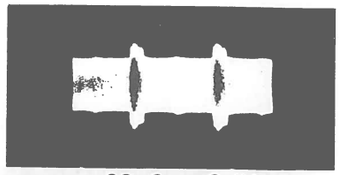
20μSec 0.16V

Waveform 18



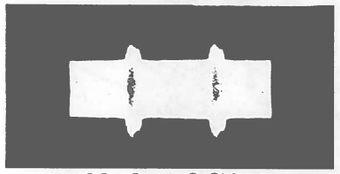
20μSec 1.6V

Waveform 19



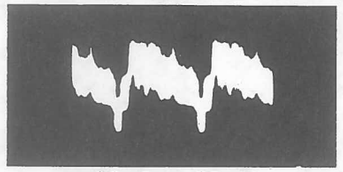
20μSec 0.4V

Waveform 20



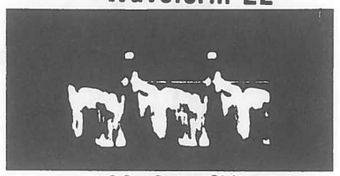
20μSec 0.6V

Waveform 21



20μSec 22mV

Waveform 22

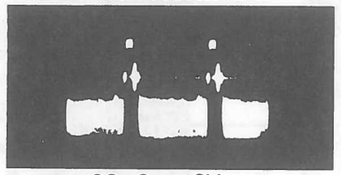


20μSec 2V

Waveform 23

20μSec 1V

Waveform 24

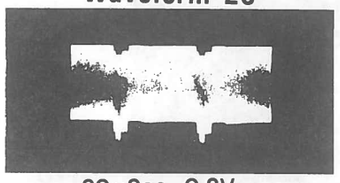


20μSec 2V

Waveform 25

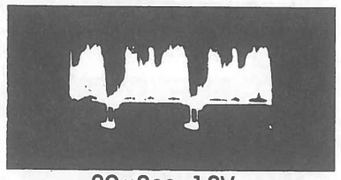
20μSec 3V

Waveform 26



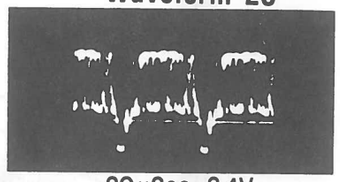
20μSec 0.8V

Waveform 27



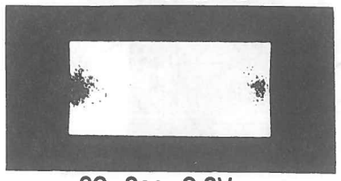
20μSec 1.2V

Waveform 28



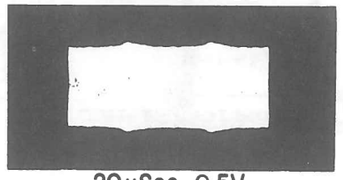
20μSec 2.4V

Waveform 29



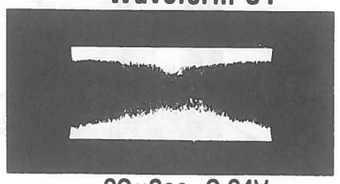
20μSec 0.8V

Waveform 30



20μSec 0.5V

Waveform 31

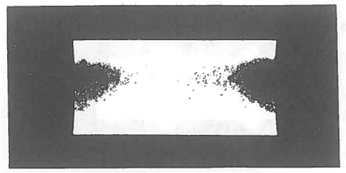


20μSec 0.64V

TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.

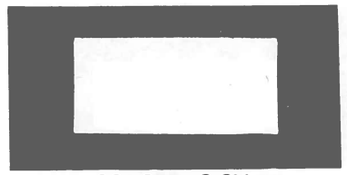


Waveform 32



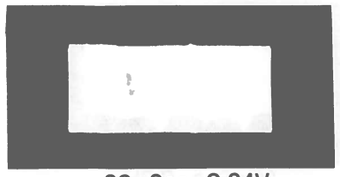
20μSec 0.64V

Waveform 33



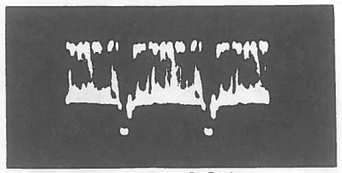
20μSec 0.3V

Waveform 34



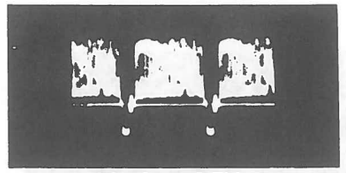
20μSec 0.34V

Waveform 35



20μSec 2.3V

Waveform 36

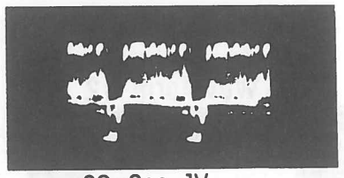


20μSec 1.5V

Waveform 37

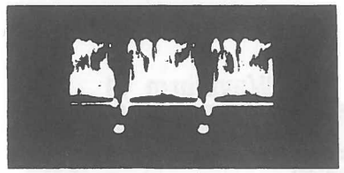
20μSec 2.5V

Waveform 38



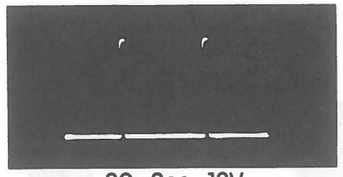
20μSec 1V

Waveform 39



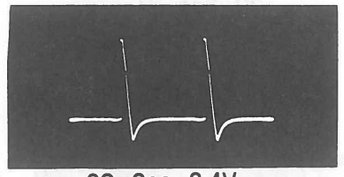
20μSec 1V

Waveform 40



20μSec 12V

Waveform 41



20μSec 3.4V

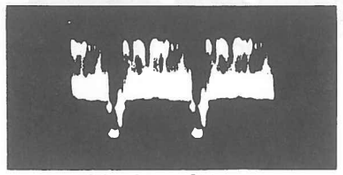
Waveform 42

20μSec 2V

Waveform 43

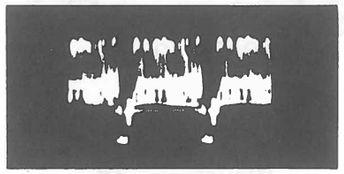
5mSec .45V

Waveform 44



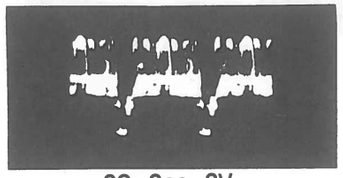
20μSec 2V

Waveform 45



20μSec 2V

Waveform 46

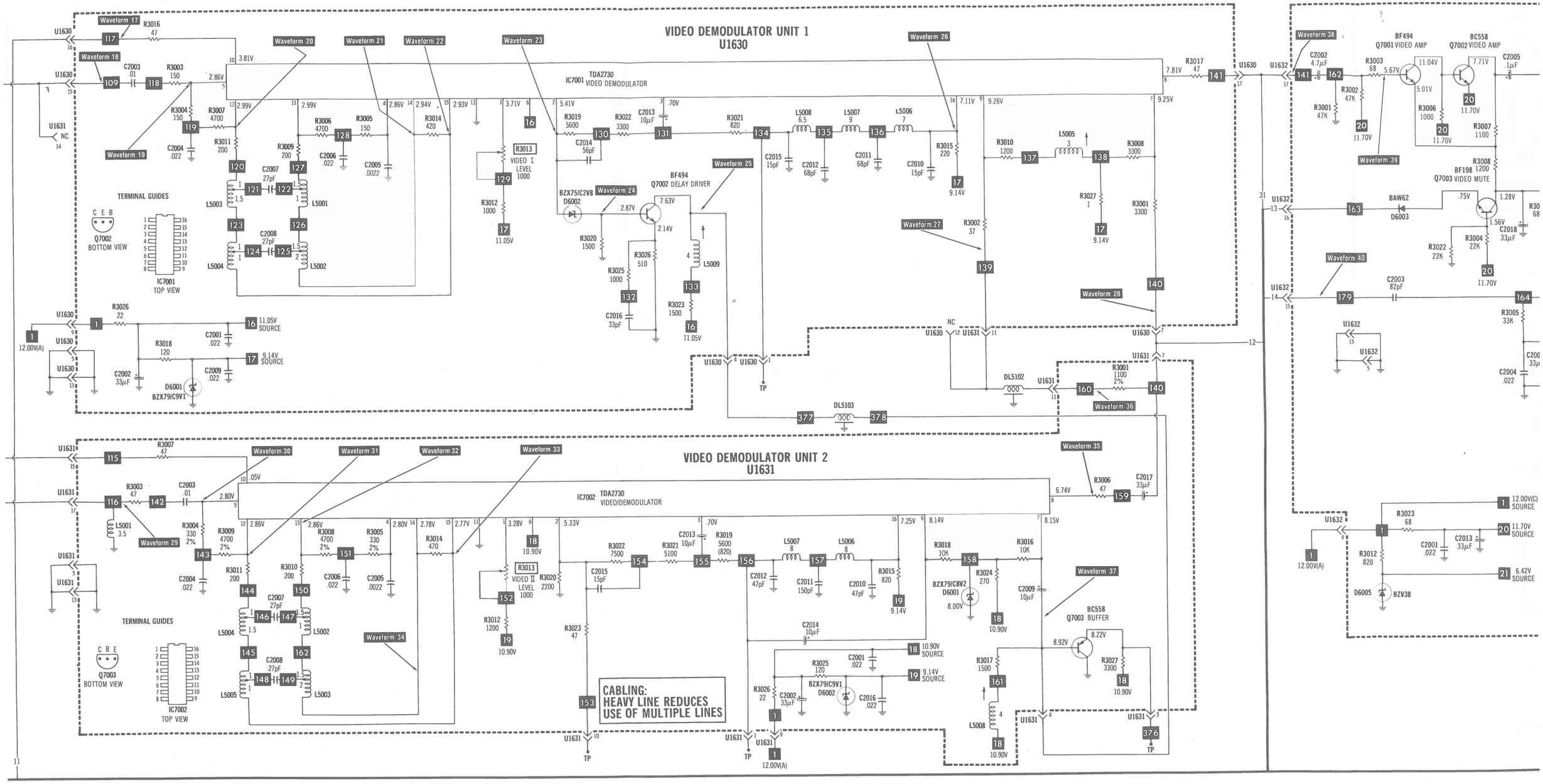


20μSec 2V

Waveform 47

20μSec 1V

TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.




PHOTOFACT STANDARD NOTATION SCHEMATIC
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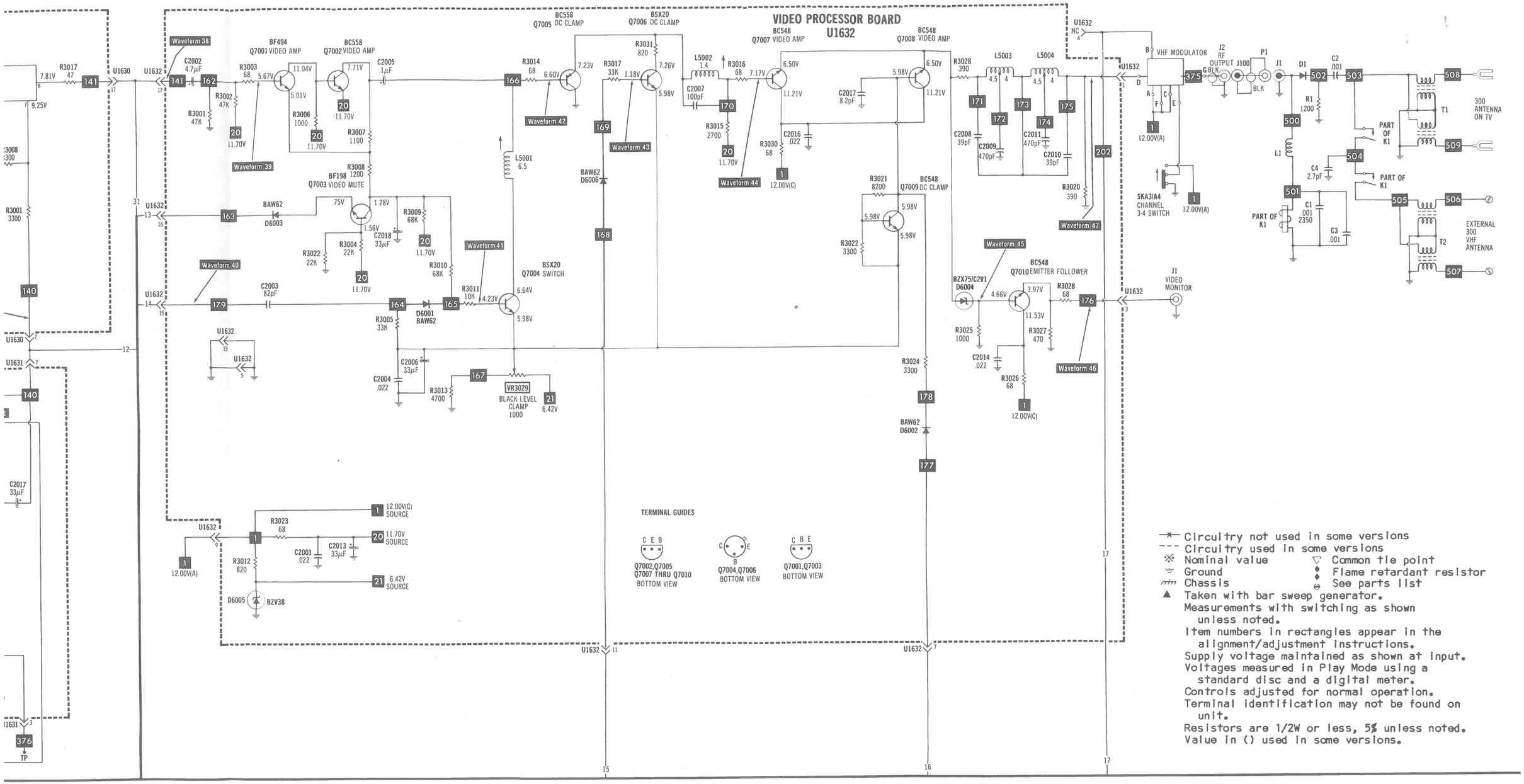
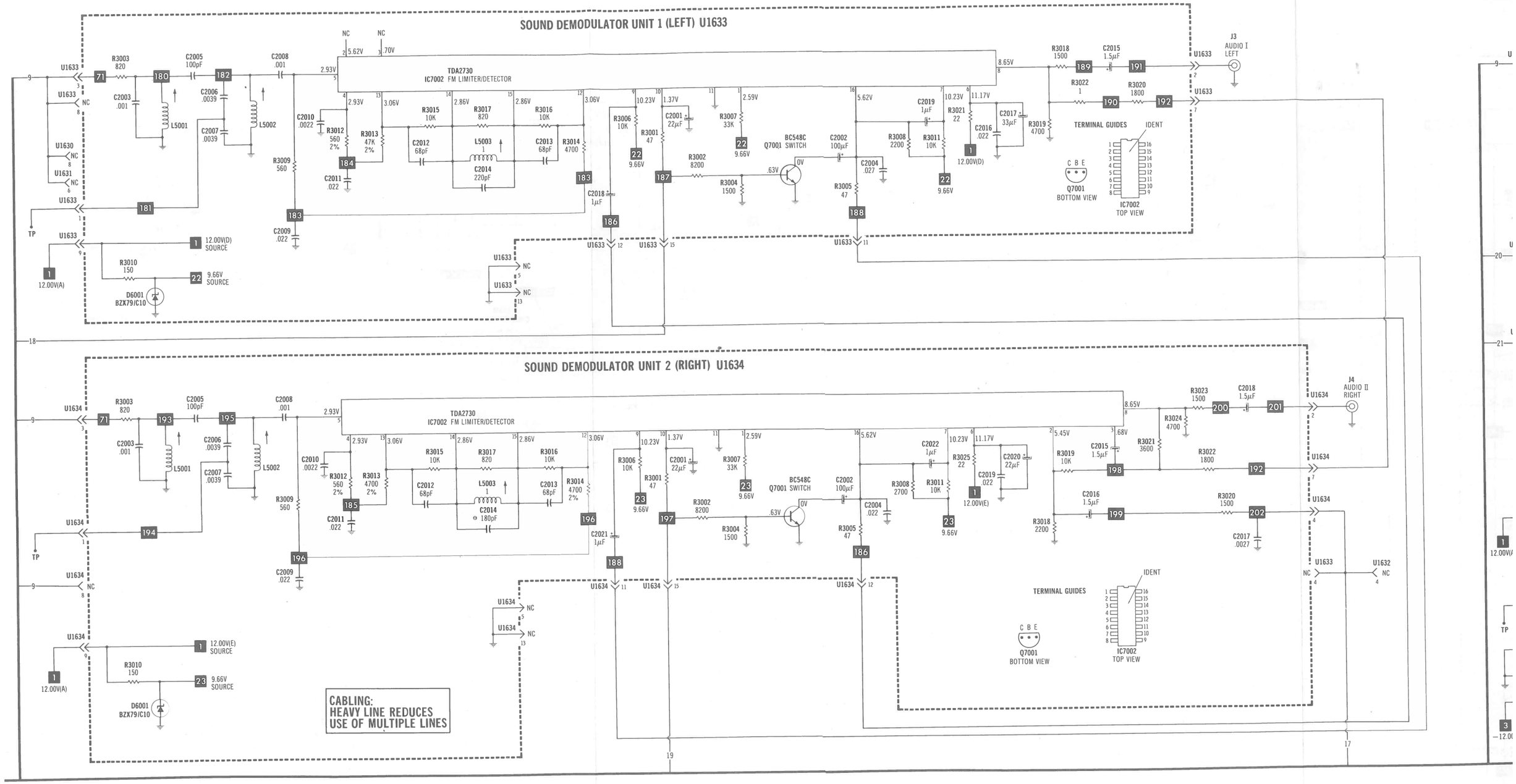
## ANTENNA SWITCHING/VIDEO DEMODULATOR I/VIDEO DEMODULATOR II/VIDEO PROCESSOR MODULE




Circuitry not used in some versions
Circuitry used in some versions
Nominal value
Ground
Chassis
Common tie point
Flame retardant resistor
See parts list
Taken with bar sweep generator.
Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.




A PHOTOFACT STANDARD NOTATION SCHEMATIC
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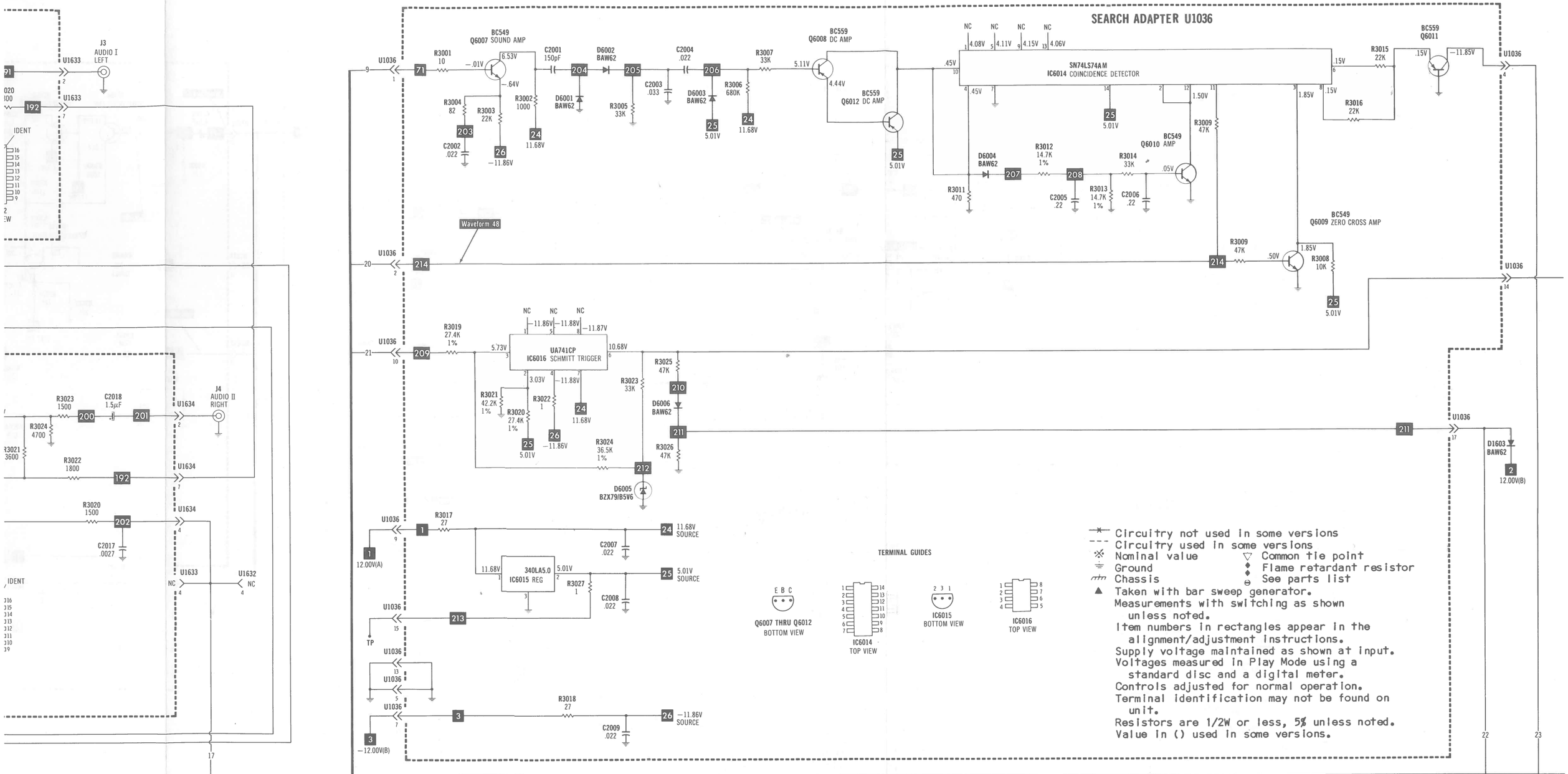
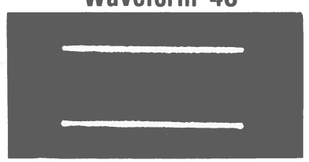
SEARCH A



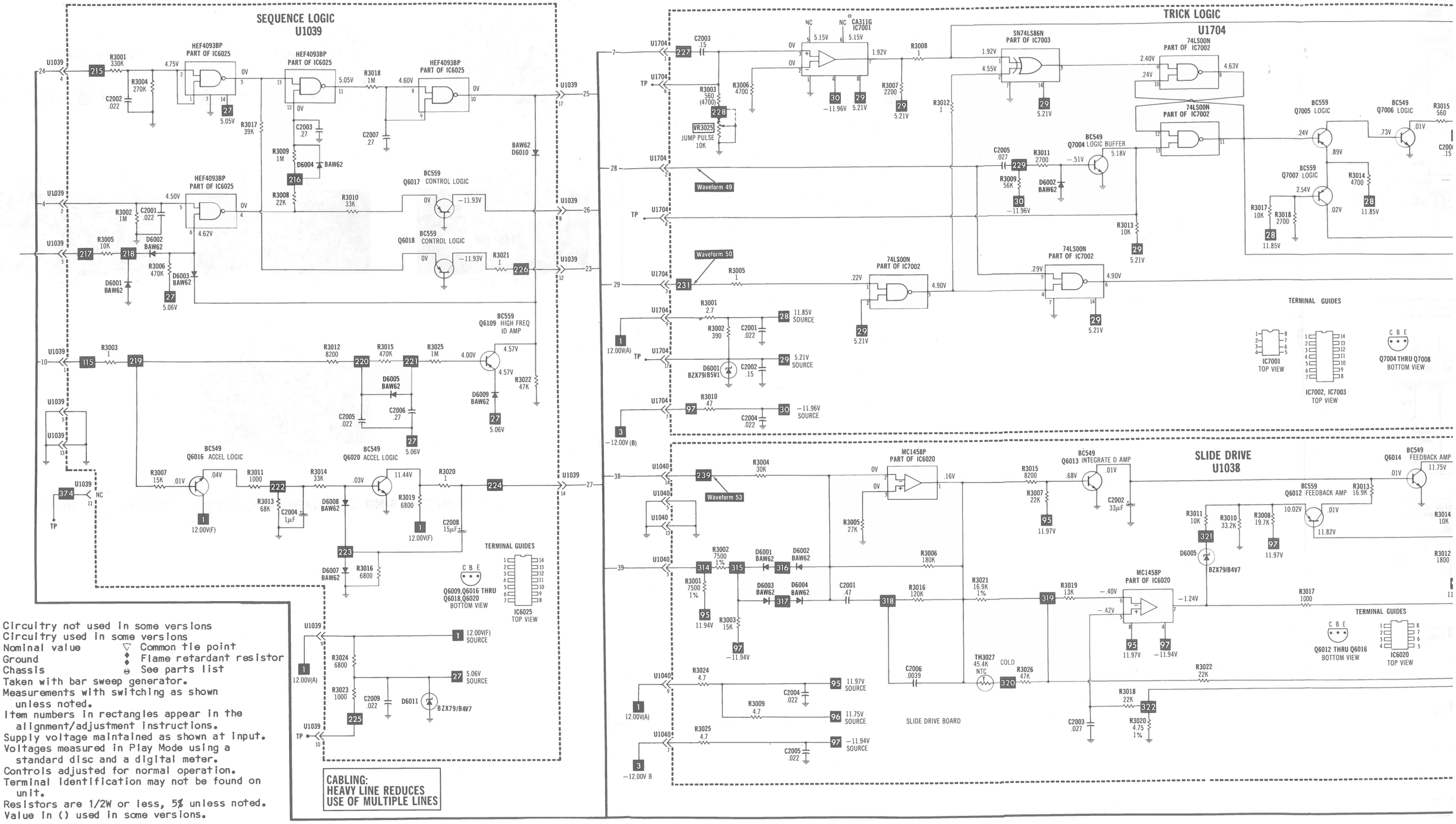

## Waveform 48



1mSec 4V

**TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.**

## SEARCH ADAPTER / SOUND DEMODULATOR I / SOUND DEMODULATOR II




Circuitry not used in some versions
Circuitry used in some versions
※ Nominal value
⏚ Ground
Chassis
▽ Common tie point
Flame retardant resistor
See parts list
▲ Taken with bar sweep generator.
Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

A PHOTOFACT STANDARD NOTATION SCHEMATIC WITH CIRCUITRACE™

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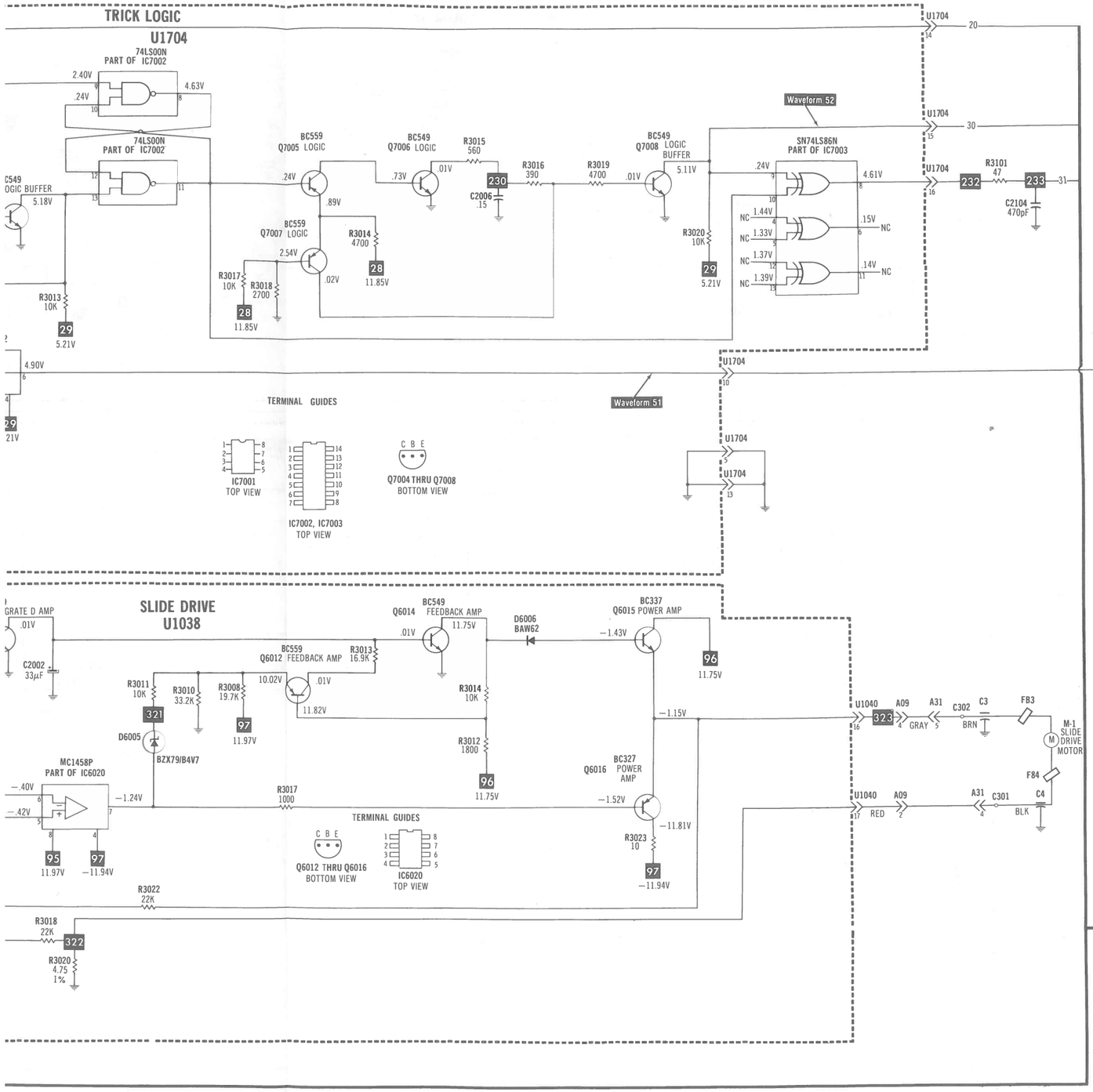
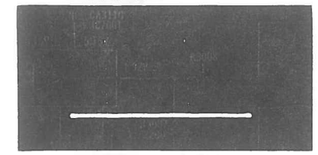
## SEQUENCE LOGIC / SLIDE DRIVE / TRICK LOGIC



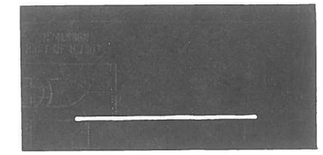



## Waveform 49



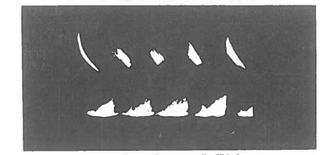
10mSec 4.5V
Still

## Waveform 50



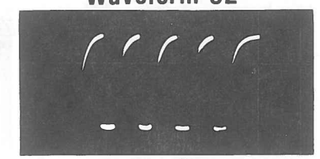
10mSec 4.3V
Still

## Waveform 51



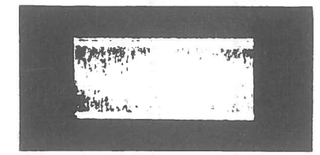
10mSec 1.5V

## Waveform 52



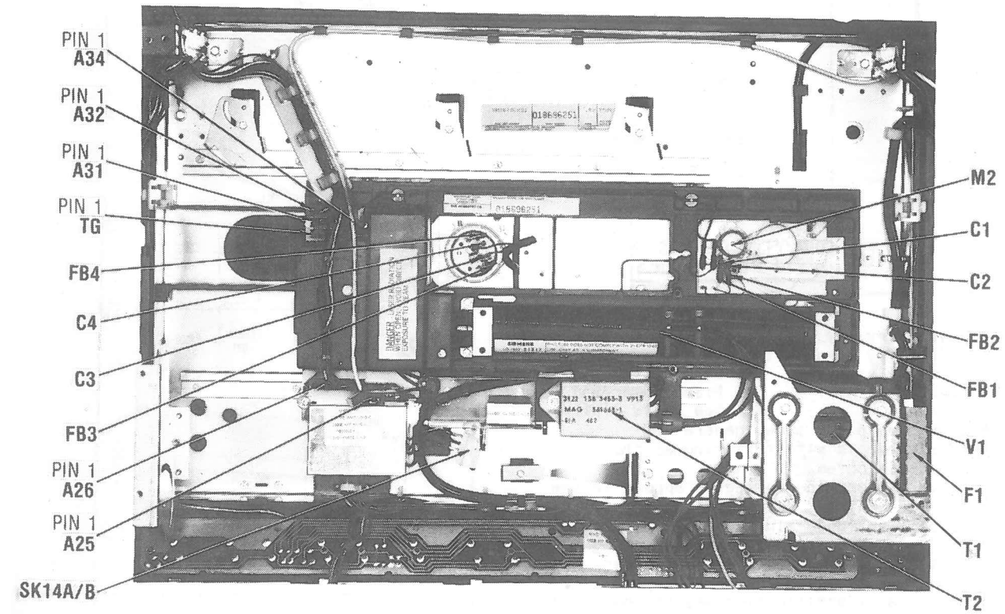
20µSec 6V

## Waveform 53

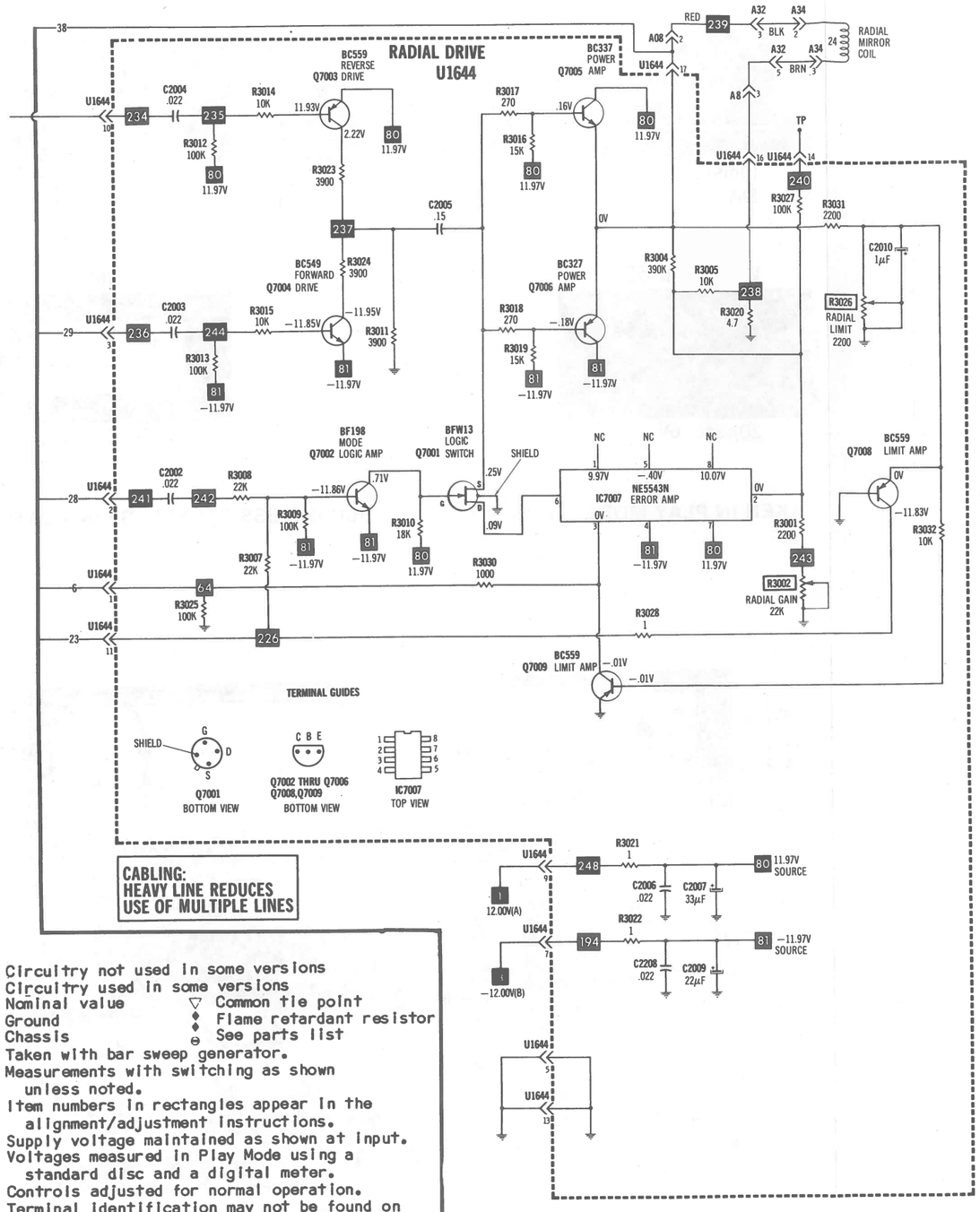


20µSec 22V

**TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.**




**CHASSIS-BOTTOM VIEW**




- Circuitry not used in some versions
- Circuitry used in some versions
- ※ Nominal value
- ▽ Common tie point
- Ground
- ♦ Flame retardant resistor
- Chassis
- ⊖ See parts list
- ▲ Taken with bar sweep generator.

Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

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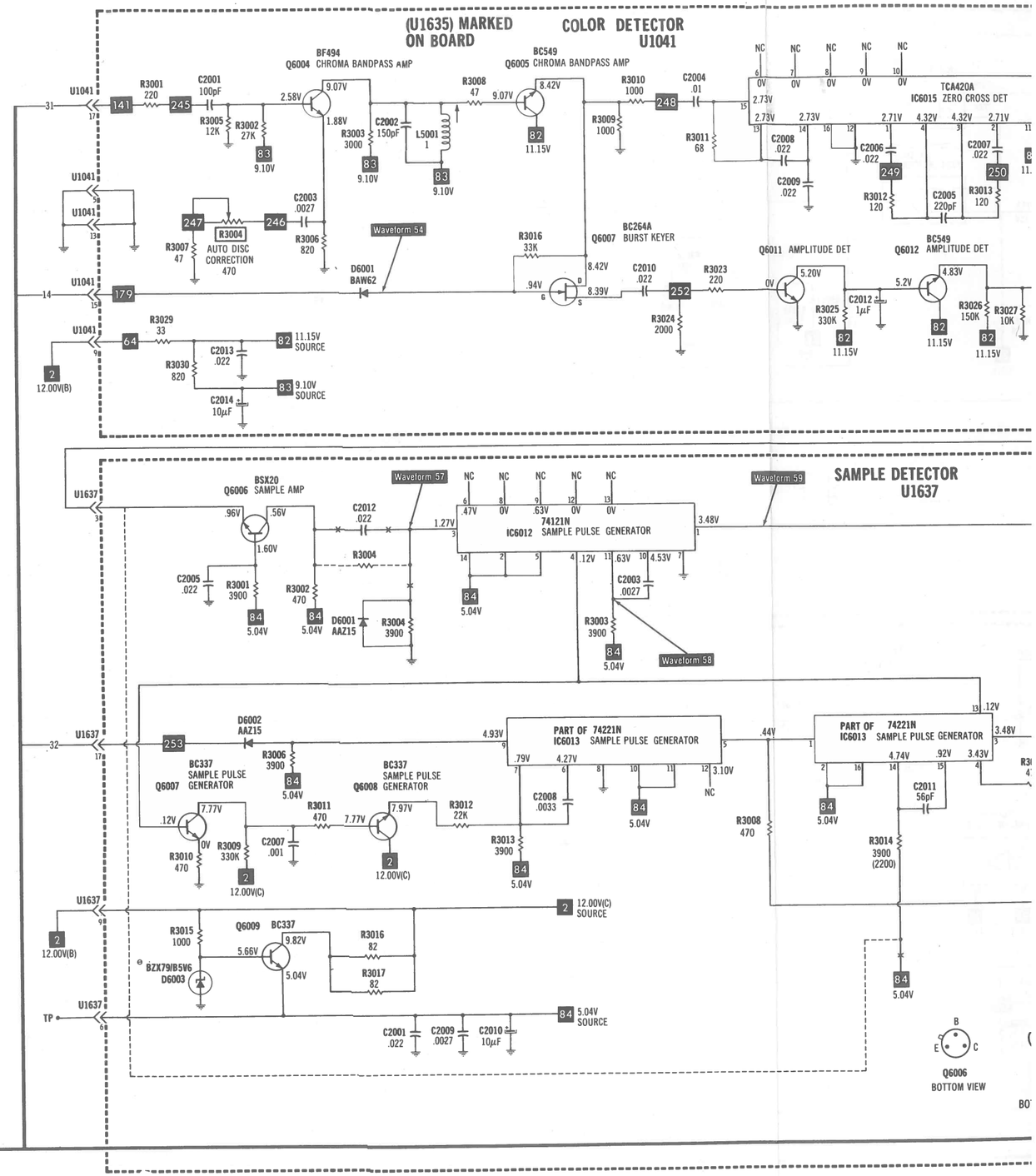
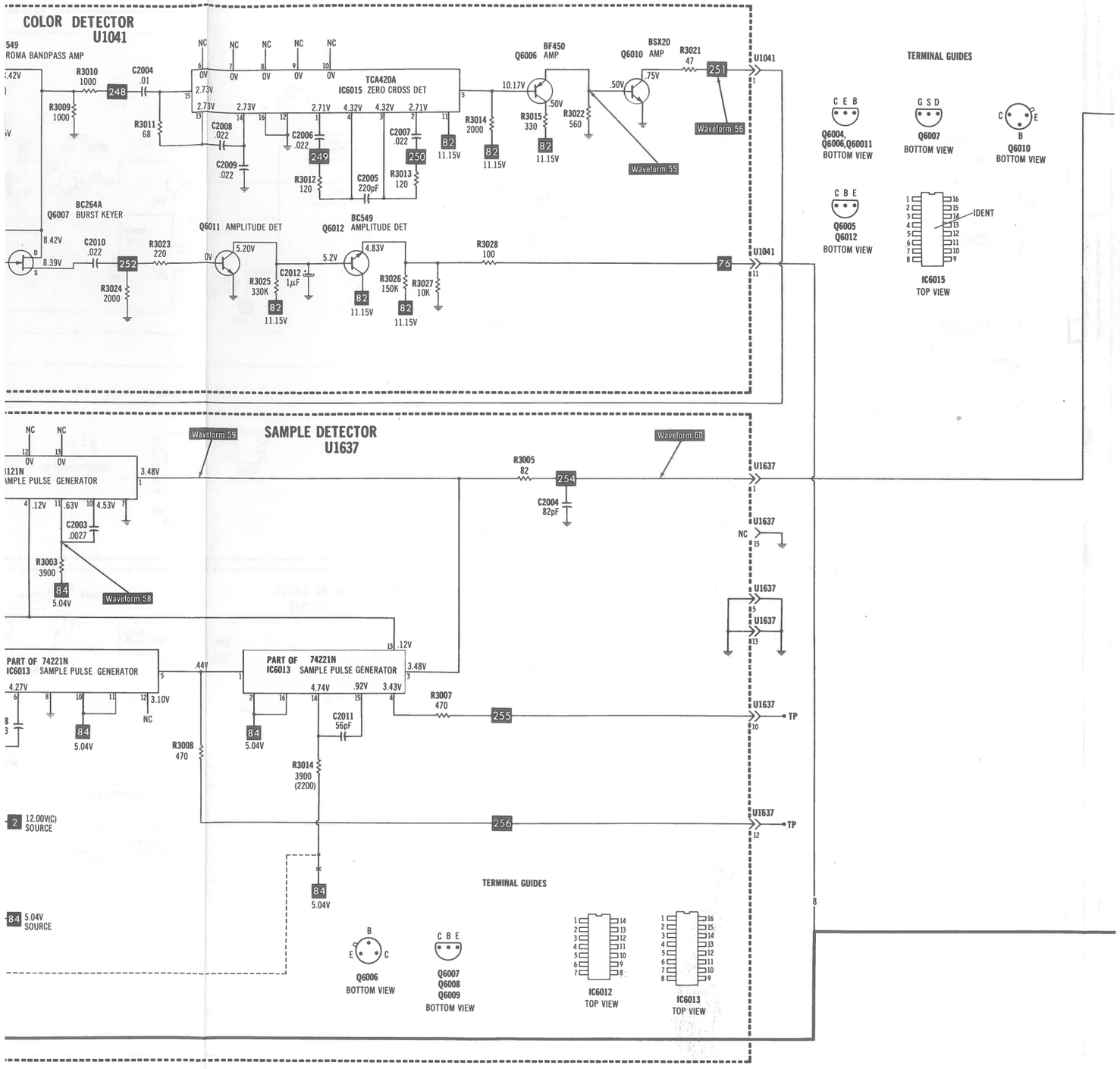
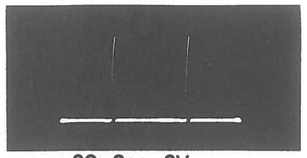


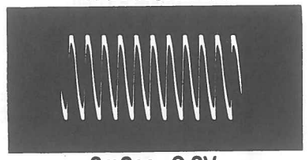



**Waveform 54**



20μSec 6V

**Waveform 55**



.2mSec 0.8V

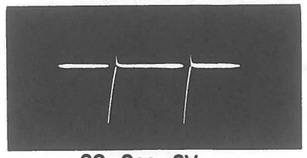
**Waveform 56**

.5mSec 0.3V

**Waveform 57**

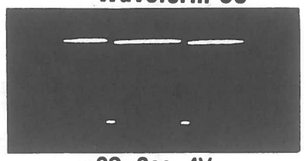
.1μSec 3.5V

**Waveform 58**



20μSec 6V

**Waveform 59**



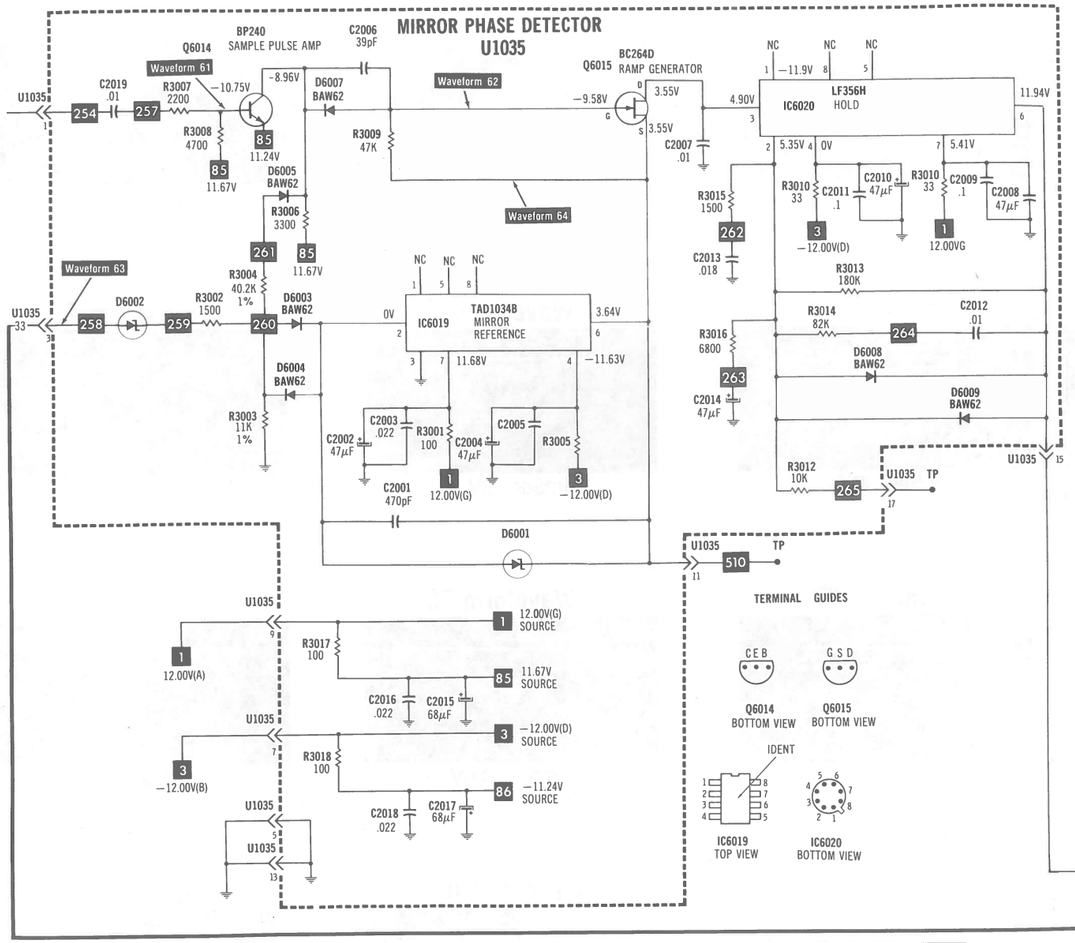
20μSec 4V

**Waveform 60**

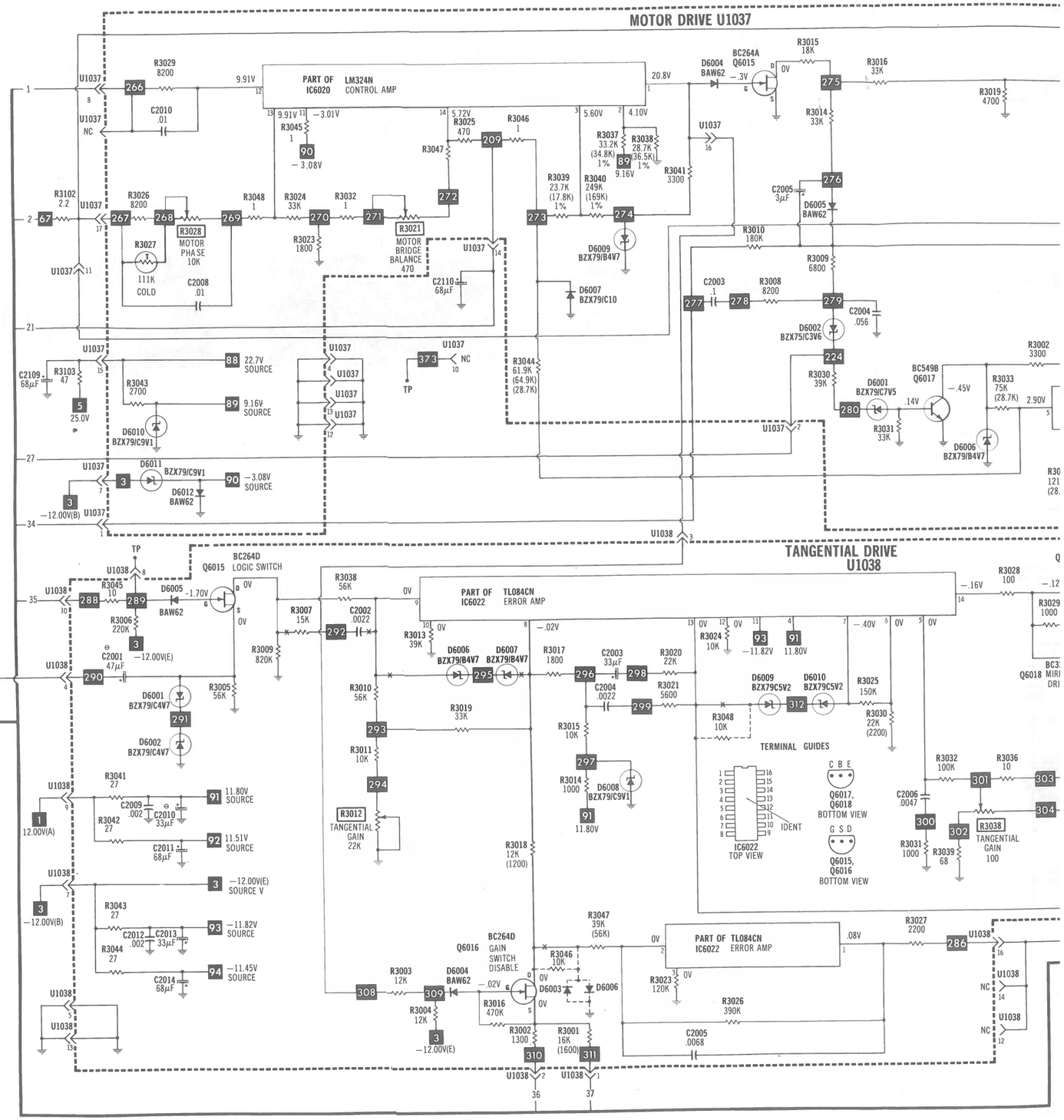
20μSec 4V

**TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.**

## RADIAL DRIVE / COLOR DETECTOR / SAMPLE DETECTOR




CABLING:
HEAVY LINE REDUCES
USE OF MULTIPLE LINES




- Circuitry not used in some versions
- Circuitry used in some versions
- ※ Nominal value
- ▽ Common tie point
- ⏚ Ground
- ◆ Flame retardant resistor
- Chassis
- ⊖ See parts list
- ▲ Taken with bar sweep generator.

Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

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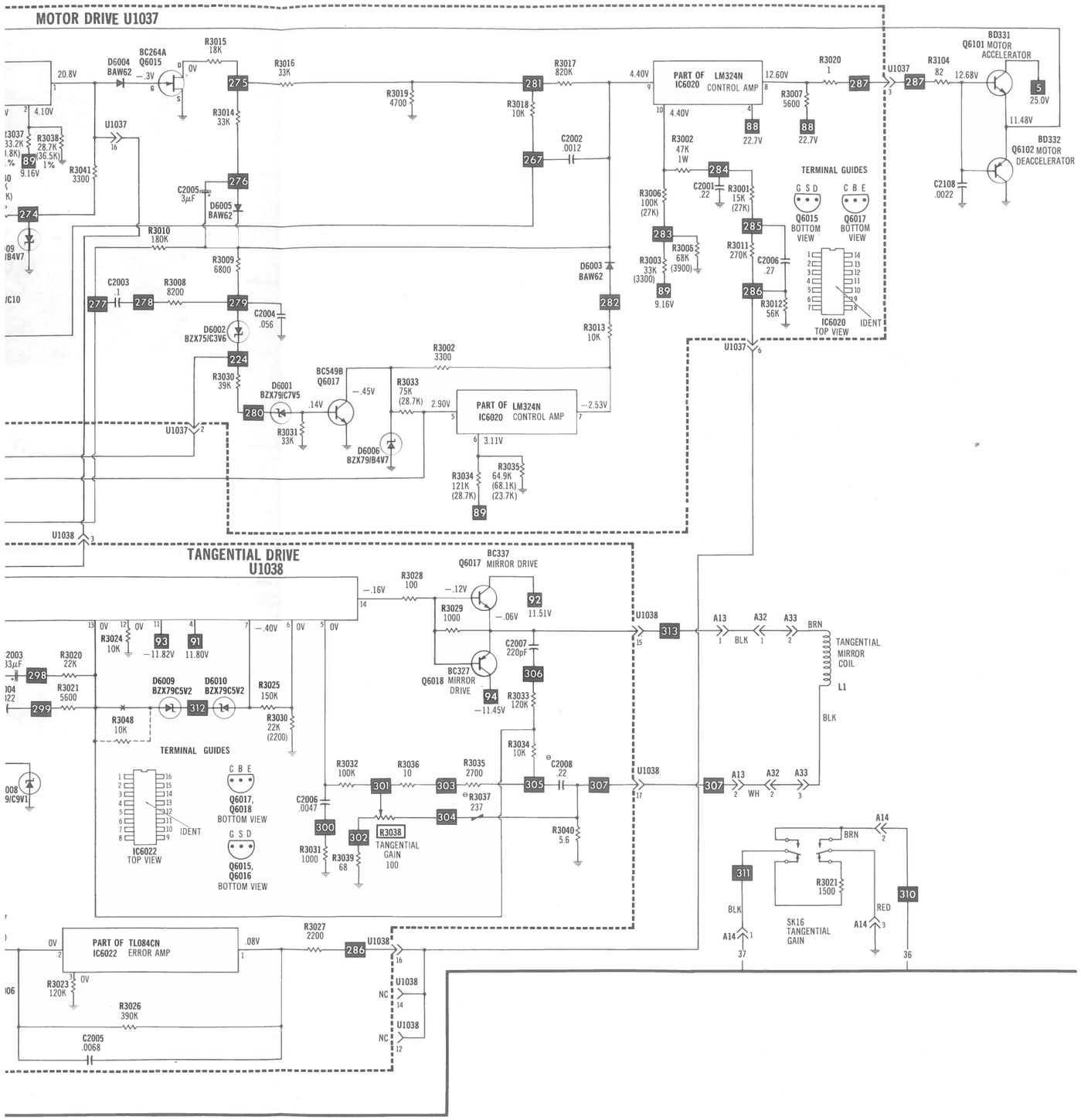
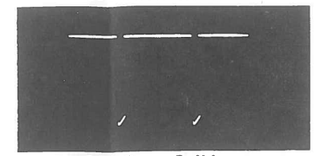
## MIRROR PHASE DETECTOR / MOTOR DRIVE / TANGENTIAL DRIVE



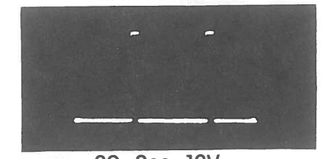



## Waveform 61



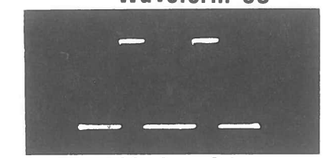
20μSec 2.4V

## Waveform 62



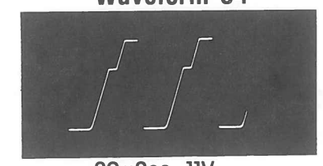
20μSec 16V
Low Cap Probe

## Waveform 63



20μSec 6V

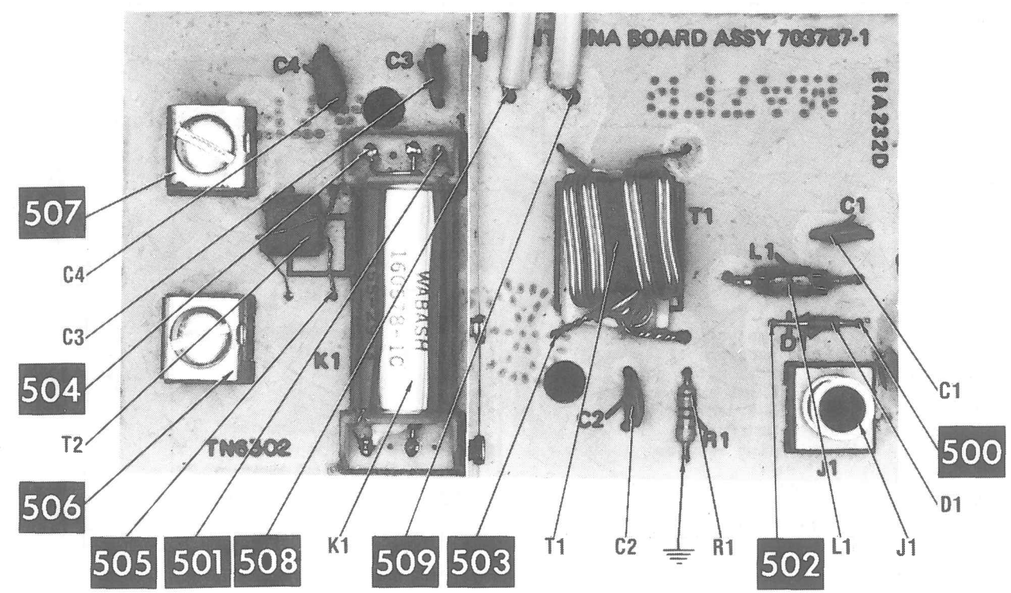
## Waveform 64



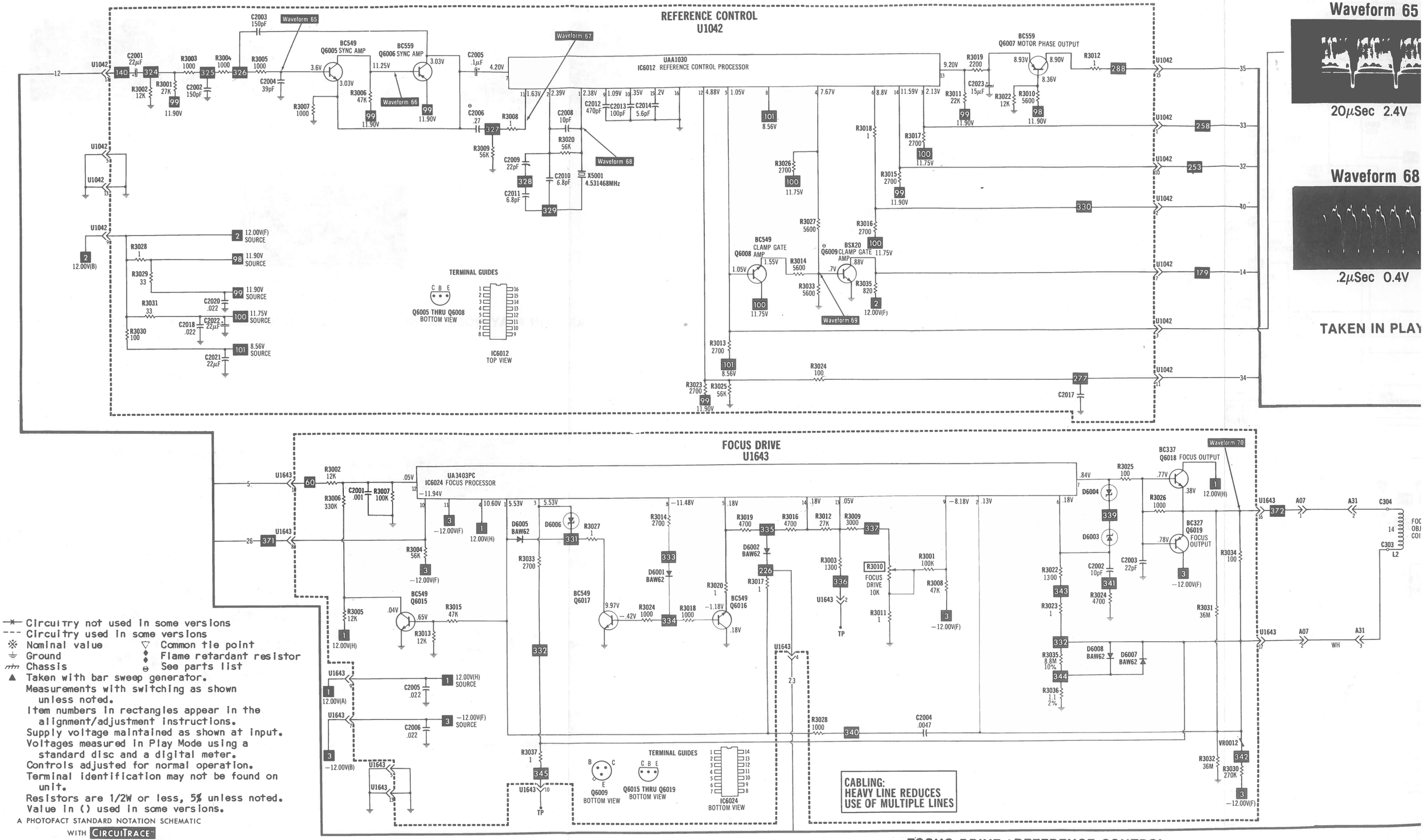
20μSec 11V

**TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.**






ANTENNA SWITCH BOX




Waveform 65



20μSec 2.4V

Waveform 68



.2μSec 0.4V

TAKEN IN PLAY

- ⊸ Circuitry not used in some versions
- --- Circuitry used in some versions
- ※ Nominal value
- ⏚ Ground
- Chassis
- ▽ Common tie point
- ♦ Flame retardant resistor
- ⊖ See parts list
- ▲ Taken with bar sweep generator.

Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.

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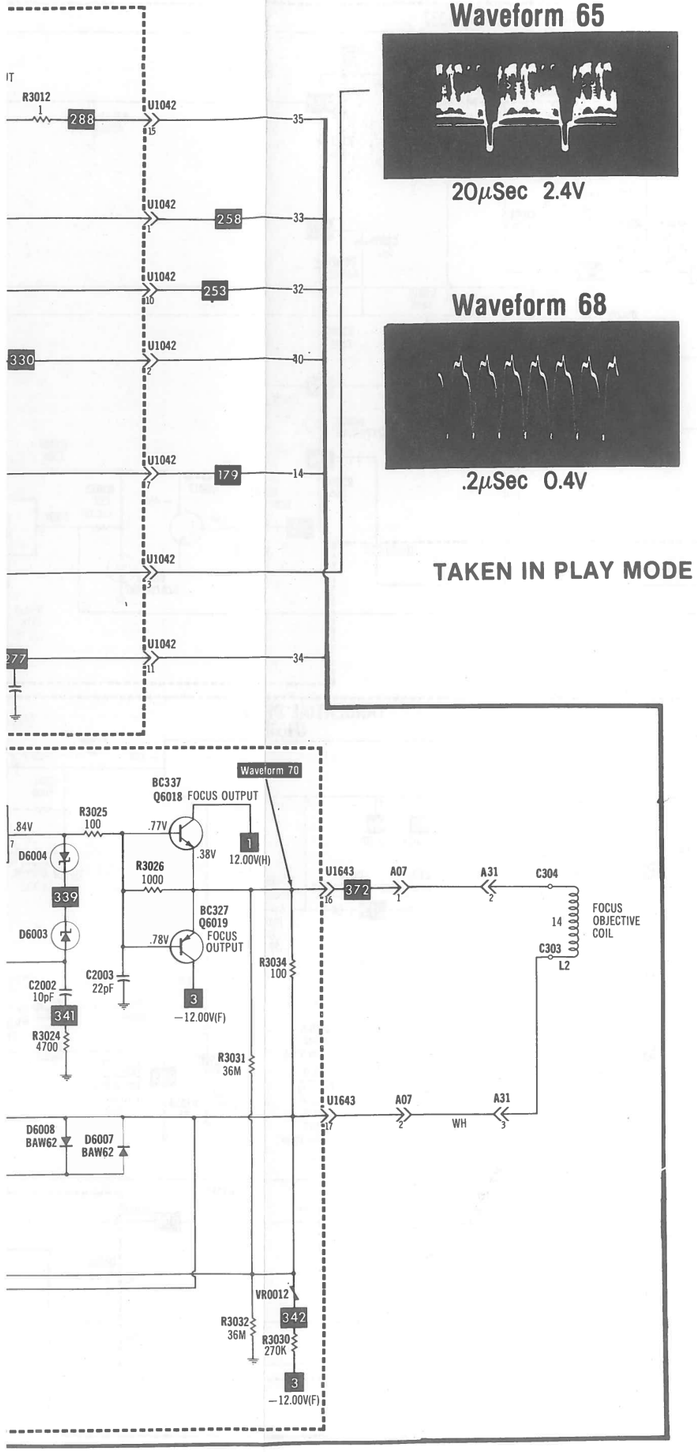
## FOCUS DRIVE / REFERENCE CONTROL



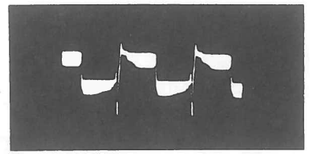



**Waveform 65**



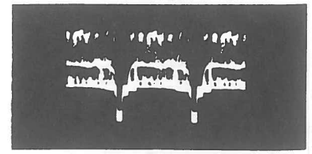
20μSec 2.4V

**Waveform 66**



20μSec 0.3V

**Waveform 67**



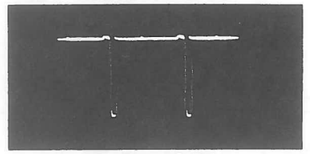
20μSec 2.4V

**Waveform 68**



.2μSec 0.4V

**Waveform 69**



20μSec 0.7V

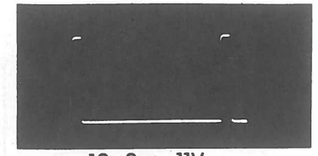
**Waveform 70**

20μSec 10V

TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.

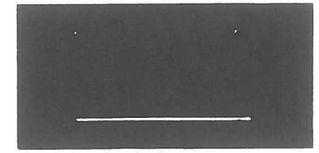


**Waveform 71**



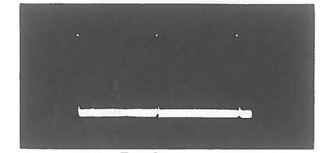
10μSec 11V

**Waveform 72**



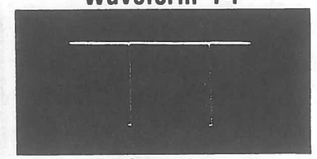
2mSec 11V

**Waveform 73**



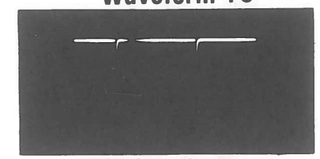
5mSec 0.6V

**Waveform 74**



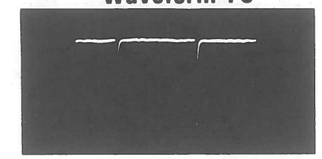
5mSec 12V

**Waveform 75**



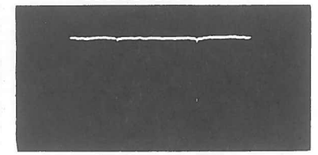
5mSec 8V

**Waveform 76**



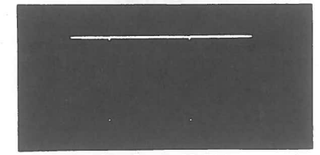
5mSec 0.4V

**Waveform 77**



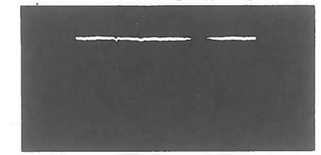
5mSec 0.5V

**Waveform 78**



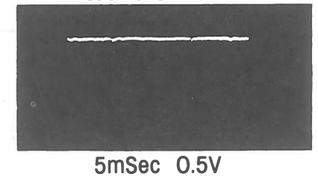
5mSec 11.5V

**Waveform 79**



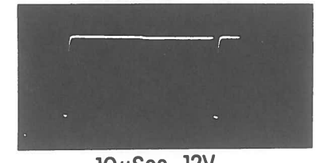
5mSec 0.5V

**Waveform 80**



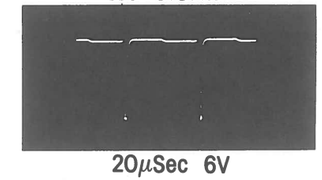
5mSec 0.5V

**Waveform 81**



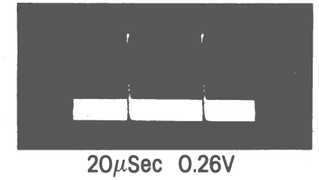
10μSec 12V

**Waveform 82**



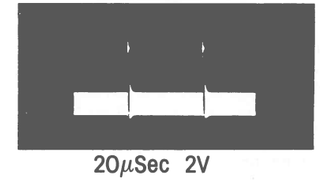
20μSec 6V

**Waveform 83**



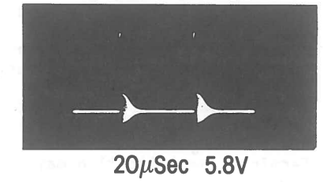
20μSec 0.26V

**Waveform 84**



20μSec 2V

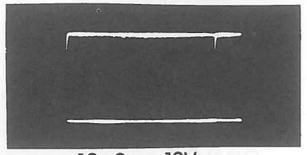
**Waveform 85**



20μSec 5.8V

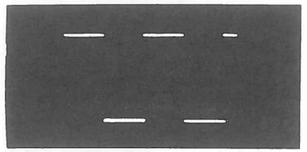
TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.

**Waveform 86**



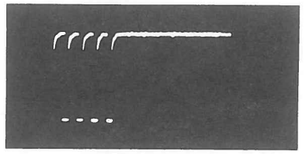
10μSec 12V

**Waveform 87**



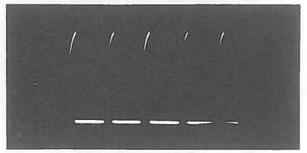
10mSec 4V
Play REVERSE

**Waveform 88**



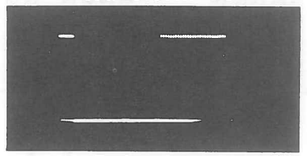
50μSec 4.4V

**Waveform 89**



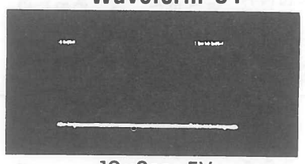
20μSec 3V

**Waveform 90**



.5μSec 12V
Frame number on

**Waveform 91**

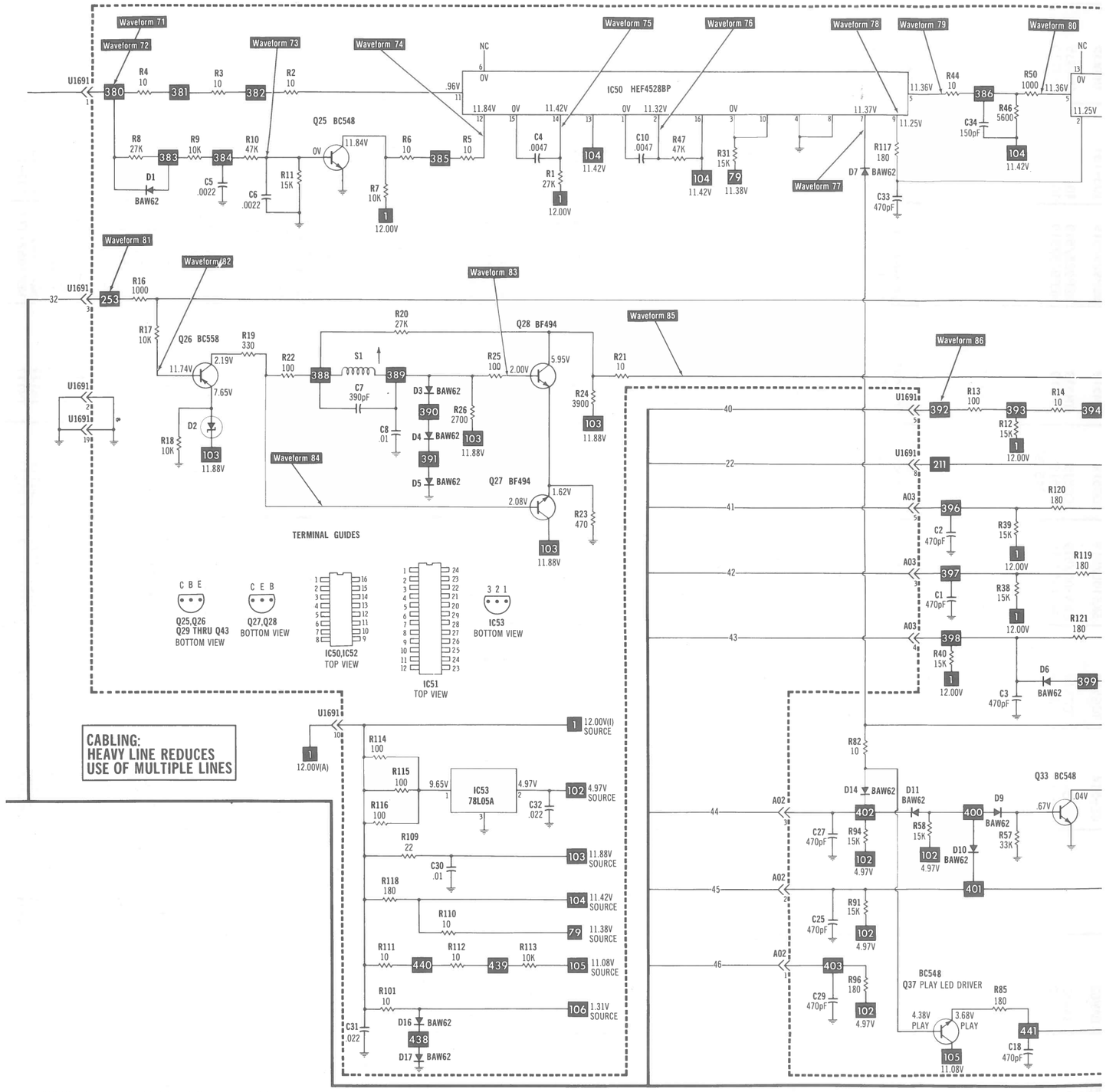


10μSec 5V
Frame number on

**TAKEN IN PLAY MODE USING STANDARD DISC UNLESS OTHERWISE INDICATED.**

—✕— Circuitry not used in some versions
--- Circuitry used in some versions
※ Nominal value
⏚ Ground
⏚ Chassis
▽ Common tie point
♦ Flame retardant resistor
⊖ See parts list
▲ Taken with bar sweep generator.
Measurements with switching as shown unless noted.
Item numbers in rectangles appear in the alignment/adjustment instructions.
Supply voltage maintained as shown at input.
Voltages measured in Play Mode using a standard disc and a digital meter.
Controls adjusted for normal operation.
Terminal identification may not be found on unit.
Resistors are 1/2W or less, 5% unless noted.
Value in () used in some versions.






A PHOTOFACT STANDARD NOTATION SCHEMATIC
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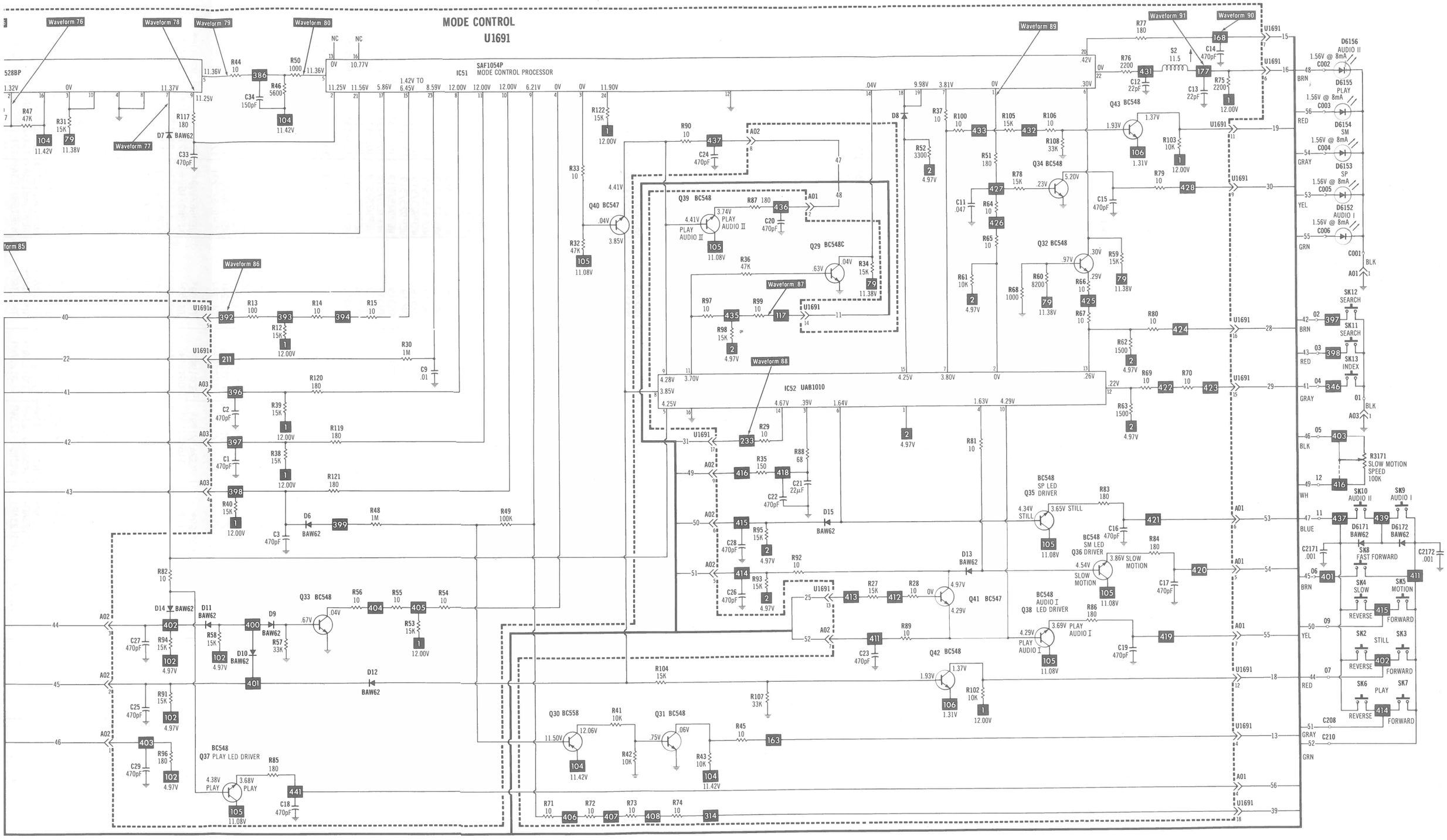
## MODE CONTROL/SWITCH BOARD


MODE CONTROL
U1691
IC51 SAF1054P
MODE CONTROL PROCESSOR
IC52 UAB1010
Q39 BC548
Q40 BC547
Q29 BC548C
Q43 BC548
Q34 BC548
Q32 BC548
Q33 BC548
Q41 BC547
Q42 BC548
Q30 BC558
Q31 BC548
Q37 PLAY LED DRIVER
Q35 DRIVER
Q36 DRIVER
Q38 LED DRIVER
D6156 AUDIO II
D6155 PLAY
D6154 SM
D6153 SP
D6152 AUDIO I
SK12 SEARCH
SK11 SEARCH
SK13 INDEX
R3171 SLOW MOTION SPEED 100K
SK10 AUDIO II
SK9 AUDIO I
SK8 FAST FORWARD
SK4 SLOW
SK5 MOTION
SK2 STILL
SK6 PLAY
SK7
REVERSE
FORWARD

BOARD

## PARTS LIST AND DESCRIPTION
*(When ordering parts, state Model, Part Number, and Des*

# SEMICONDUCTORS (Select replacement transistor for best results)

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| **ANTENNA SWITCH BOX** | | | | | | | | | | |
| D1 | | 530174-1 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| **(U1041) COLOR DETECTOR MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6015 | TCA420A | | | | | | | | | |
| Q6004 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q6005 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6006 | BF450 | | GE-123AP* | TCG123AP* | SK3854/123AP* | ECG123AP* | TM123AP* | WEP736/123A* | 121-Z9000A* | MPSA05* |
| Q6007 | BC264A | | | TCG457+ | | ECG457+ | | | | |
| Q6010 | BSX20 | | GE-20 | TCG123A | SK3444/123A | ECG123A | TM123A | WEP736/123A | 121-Z9000A | MPSA05 |
| Q6011 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q6012 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **(U1629) DROP OUT DETECTOR MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6011 | UA733CN | | | | SK9017 | | | | | |
| IC6012 | HEF4528BD | | | | | ECG4528B | | | | |
| Q6006 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9012+ | MPSH34+ |
| Q6007 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q6008 | BF450 | | GE-123AP* | TCG123AP* | SK3854/123AP* | ECG123AP* | TM123AP* | WEP736/123A* | 121-Z9000A* | MPSA05* |
| Q6009 | BF450 | | GE-123AP* | TCG123AP* | SK3854/123AP* | ECG123AP* | TM123AP* | WEP736/123A* | 121-Z9000A* | MPSA05* |
| **(U1643) FOCUS DRIVE MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6004 | | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6005 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6006 | | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6007 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6008 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6024 | UA3403PC | | | | | | | | | |
| Q6015 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6016 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6017 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6018 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6019 | BC327 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| **(U1035) MIRROR PHASE MODULE** | | | | | | | | | | |
| D6001 | | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| D6002 | | | | TCG5003A | SK3769/5003A | ECG5003A | TM5003A | WEP1403/5003 | | 1N5224B |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6007 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6008 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6009 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6019 | TDA1034B | | | | | | | | | |
| IC6020 | LF356H | | | | | ECG937 | | | | |
| Q6014 | BF240 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q6015 | BC264D | | GE-FET-2 | TCG312+ | SK3448+ | ECG312+ | TM312+ | WEP920/312+ | 921-1067+ | 2N5459+ |
| **CHASSIS/SWITCH BOARD** | | | | | | | | | | |
| D6171 | BAW62 | E30181-1 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6172 | BAW62 | E30181-1 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| **(U1691) MODE CONTROL MODULE** | | | | | | | | | | |
| D1 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D2 | | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D3 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D4 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D5 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D7 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D8 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D9 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D10 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D11 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D12 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D13 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D14 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D15 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D16 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D17 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC50 | HEF4528BP | | | | | ECG4528B | | | | |
| IC51 | SAF1054P | | | | | | | | | |
| IC52 | UAB1010 | | | | | | | | | |
| IC53 | 78L05A | | GEVR-100 | TCG977 | SK3462/977 | ECG977 | TM977 | | 221-Z9044 | MC78L05CP |
| Q25 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q26 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q27 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q28 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q29 | BC548C | | GE-62* | TCG199* | SK3245/199* | ECG199* | TM199* | WEP66/199* | 121-972+ | MPSA18* |
| Q30 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q31 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q32 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q33 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q34 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q35 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q36 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q37 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q38 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q39 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q40 | BC547 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q41 | BC547 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q42 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| D14 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D15 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D16 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D17 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC50 | HEF4528BP | | | | | ECG4528B | | | | |
| IC51 | SAF1054P | | | | | | | | | |
| IC52 | UAB1010 | | | | | | | | | |
| IC53 | 78L05A | | GEVR-100 | TCG977 | SK3462/977 | ECG977 | TM977 | | 221-Z9044 | MC78L05CP |
| Q25 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q26 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q27 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q28 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q29 | BC548C | | GE-62* | TCG199* | SK3245/199* | ECG199* | TM199* | WEP66/199* | 121-972+ | MPSA18* |
| Q30 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q31 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q32 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q33 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q34 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q35 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q36 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q37 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q38 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q39 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q40 | BC547 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q41 | BC547 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q42 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q43 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **(U1037) MOTOR DRIVE MODULE** | | | | | | | | | | |
| D6001 | BZX79/C7V5 | | GEZD-7.5 | TCG5015A | SK3781/5015A | ECG5015A | TM5015A | WEP1416/5015 | 103-Z9002 | 1N5236A |
| D6002 | BZX75/C3V6 | | GEZD-3.6 | TCG5006A | SK3772/5006A | ECG5006A | TM5006A | WEP1406/5006 | 103-Z9005 | 1N5227A |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6006 | BZX79/B4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6007 | BZX79/C10 | | GEZD-10 | TCG5019A | SK3785/5019A | ECG5019A | TM5019A | WEP1420/5019 | 103-Z9010 | 1N5240A |
| D6009 | BZX79/B4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| C6010 | BZX79/B9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| D6011 | BZX79/C9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| D6012 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6020 | LM324N | | | TCG987 | SK3643/987 | ECG987 | TM987 | | | |
| Q6015 | BC264A | | | TCG457+ | | ECG457+ | | | | |
| Q6017 | BC549B | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **POWER SUPPLY BOARD** | | | | | | | | | | |
| D1 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D2 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D3 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D4 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D5 | | 530181-3 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D6 | | 530181-3 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| # D7 | | 530182-1 | | | | | | | | |
| # D8 | | 530182-1 | | | | | | | | |
| D9 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D10 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D11 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D12 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D13 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D14 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D15 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D16 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D17 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D18 | | 530171-1 | GE-504A | TCG116 | SK3313/116 | ECG116 | TM116 | WEP158/116 | 212-76-02 | 1N4005 |
| D19 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| D20 | | 530181-1 | GE-300 | TCG177 | SK9091/177 | ECG177 | TM177 | WEP1062/177 | 103-131 | 1N4935 |
| IC1 | | 612123-3 | | | | | | | | |
| Q1 | | 610250-2 | GE-27 | TCG171 | SK3865 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU04 |
| Q2 | | 610232-2 | GE-123AP | TCG123AP | SK3854/123AP | ECG123AP | TM123AP | WEP736/123A | 121-Z9000A | MPSA05 |
| Q3 | | 610232-2 | GE-123AP | TCG123AP | SK3854/123AP | ECG123AP | TM123AP | WEP736/123A | 121-Z9000A | MPSA05 |
| Q4 | | 610113-2 | GE-64* | TCG172A* | SK3156/172A* | ECG172A* | TM172A* | WEP971/172* | 121-Z9024* | 2N6427* |
| Q5 | | 610195-2002 | | | | | | | | |
| Q6 | | 610213-2 | GE-243 | TCG128 | SK3024/128 | ECG128 | TM128 | WEP59/128 | 121-792 | 2N5681 |
| Q7 | | 610250-2 | GE-27 | TCG171 | SK3865 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU04 |
| Q8 | | 610213-2 | GE-243 | TCG128 | SK3024/128 | ECG128 | TM128 | WEP59/128 | 121-792 | 2N5681 |
| Q9 | | 610250-2 | GE-27 | TCG171 | SK3865 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU04 |
| Q10 | | 610245-1 | GE-262 | TCG280 | SK3297/280 | ECG280 | TM280 | WEP768/328 | 121-Z9042 | MJ15001 |
| Q11 | | 610195-2003 | | | | | | | | |
| Q12 | | 610083-1 | GE-65* | TCG234* | SK3247/234* | ECG234* | TM234* | WEP907/234* | 121-879* | 2N5087* |
| Q13 | | 610213-2 | GE-243 | TCG128 | SK3024/128 | ECG128 | TM128 | WEP59/128 | 121-792 | 2N5681 |
| Q14 | | 610250-2 | GE-27 | TCG171 | SK3865 | ECG171 | TM171 | WEP702/171 | 121-822 | MPSU04 |
| Z1 | | 530157-689 | GEZD-6.8 | TCG5071A | SK3334/5071A | ECG5071A | TM5071A | WEP1106/5071 | 103-Z9020 | 1N4736 |
| **PREAMP BOARD** | | | | | | | | | | |
| D7006 | BZX79/C9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| IC7004 | SA1458N | | GEIC-220 | TCG778A | SK3465/778A | ECG778A | TM778A | WEP2053/778 | 221-Z9034 | MC1458CP1 |
| IC7005 | SA1458N | | GEIC-220 | TCG778A | SK3465/778A | ECG778A | TM778A | WEP2053/778 | 221-Z9034 | MC1458CP1 |
| Q7001 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7002 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7003 | BF240 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| **(U1644) RADIAL DRIVE MODULE** | | | | | | | | | | |
| IC7007 | NE5534N | | | | | | | | | |
| Q7001 | BFW13 | | GE-FET-2* | TCG312+ | SK3448* | ECG312+ | TM312+ | WEP920/312+ | 921-1067* | 2N5459* |
| Q7002 | BF198 | | GE-61 | TCG229* | SK3246/229* | ECG229* | TM229* | WEP956/229* | 121-Z9021 | MPSH34* |
| Q7003 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7004 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7005 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7006 | BC327 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7008 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7009 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| **(U1042) REFERENCE CONTROL MODULE** | | | | | | | | | | |
| IC6012 | UAA1030 | | | | | | | | | |
| Q6005 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6006 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6007 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6008 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6009 | BSX20 | | GE-20 | TCG123A | SK3444/123A | ECG123A | TM123A | WEP736/123A | 121-Z9000A | MPSA05 |

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| **(U1628) RF PROCESSOR MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| Q7001 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7002 | BC264B | | GE-FET-2+ | TCG312 | SK3448 | ECG312 | TM312 | WEP920/312 | 921-1067 | 2N5459 |
| Q7003 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7004 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7005 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7006 | BF450 | | GE-123AP* | TCG123AP* | SK3854/123AP* | ECG123AP* | TM123AP* | WEP736/123A* | 121-Z9000A* | MPSA05* |
| Q7007 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7008 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| **(U1637) SAMPLE DETECTOR MODULE** | | | | | | | | | | |
| D6001 | AAZ15 | | 1N60 | TCG109 | SK3090/109 | ECG109 | TM109 | WEP134/109 | 103-Z9001 | 1N34A |
| D6002 | AAZ15 | | 1N60 | TCG109 | SK3090/109 | ECG109 | TM109 | WEP134/109 | 103-Z9001 | 1N34A |
| D6003 | BZX79/B5V6 | | GEZD-5.6 | TCG5011A | SK3777/5011A | ECG5011A | TM5011A | WEP1412/5011 | 103-Z9007 | 1N5232A |
| IC6012 | 74121N | | | TCG74121 | SK74121 | ECG74121 | | | HE-443-22 | C74121P |
| IC6013 | 74221N | | | | | | | | | |
| Q6006 | BSX20 | | GE-20 | TCG123A | SK3444/123A | ECG123A | TM123A | WEP736/123A | 121-Z9000A | MPSA05 |
| Q6007 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6008 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6009 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **(U1036) SEARCH ADAPTER MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BZX79/B5V6 | | GEZD-5.6 | TCG5011A | SK3777/5011A | ECG5011A | TM5011A | WEP1412/5011 | 103-Z9007 | 1N5232A |
| D6006 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6014 | SN74LS74AM | | | TCG74LS74A | SK74LS74 | ECG74LS74A | | | HE-443-730 | SN74LS74AN |
| | N74LS74N | | | TCG74LS74A | SK74LS74 | ECG74LS74A | | | HE-443-730 | SN74LS74AN |
| IC6015 | 340LA5.0 | | GEVR-100 | TCG977 | SK3462/977 | ECG977 | TM977 | | 221-Z9044 | MC78L05CP |
| | LM340LA2-560 | | GEVR-100 | TCG977 | SK3462/977 | ECG977 | TM977 | | 221-Z9044 | MC78L05CP |

# SEMICONDUCTORS (Select replacement transistor for best results) (cont)

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| IC6016 | UA741CP | | GEIC-264 | TCG941D | | ECG941D | TM941D | WEP2063/941D | 221-Z9145 | MC1741CP2 |
| | UA741CN | | GEIC-264 | TCG941D | | ECG941D | TM941D | WEP2063/941D | 221-Z9145 | MC1741CP2 |
| Q6007 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6008 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6009 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6010 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6011 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6012 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| **(U1039) SEQUENCE LOGIC MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6007 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6008 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6009 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6010 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6011 | BZX79/B5V1 | | GEZD-5.1 | TCG5010A | SK3776/5010A | ECG5010A | TM5010A | WEP1411/5010 | 103-279-10 | 1N5231A |
| IC6025 | HEF4093BP | | | TCG4093B | SK4093 | ECG4093B | TM4093 | | | |
| Q6016 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6017 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6018 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6019 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6020 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **(U1040) SLIDE DRIVE MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BZX79/B4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART. No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| D6006 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC6020 | MC1458P | | GE IC-220 | TCG778A | SK3465/778A | ECG778A | TM778A | WEP2053/778 | 221-Z9034 | MC1458CP1 |
| Q6012 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q6013 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6014 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6015 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6016 | BC327 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| **(U1633) SOUND DEMODULATOR I MODULE** | | | | | | | | | | |
| D6001 | BZX79C/10 | | GEZD-10 | TCG5019A | SK3785/5019A | ECG5019A | TM5019A | WEP1420/5019 | 103-Z9010 | 1N5240A |
| IC7002 | TDA2730 | | | | | | | | | |
| Q7001 | BC548C | | GE-62* | TCG199* | SK3245/199* | ECG199* | TM199* | WEP66/199* | 121-972+ | MPSA18* |
| **(U1634) SOUND DEMODULATOR II MODULE** | | | | | | | | | | |
| D6001 | BZX79/C10 | | GEZD-10 | TCG5019A | SK3785/5019A | ECG5019A | TM5019A | WEP1420/5019 | 103-Z9010 | 1N5240A |
| IC7002 | TDA2730 | | | | | | | | | |
| Q7001 | BC548C | | GE-62* | TCG199* | SK3245/199* | ECG199* | TM199* | WEP66/199* | 121-972+ | MPSA18* |
| **(U1038) TANGENTIAL DRIVE MODULE** | | | | | | | | | | |
| D6001 | BZX79/C4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6002 | BZX79/C4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6004 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6005 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6006 | BZX79/C4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6007 | BZX79/C4V7 | | GEZD-4.7 | TCG5009A | SK3775/5009A | ECG5009A | TM5009A | WEP1409/5009 | 103-279-09 | 1N5230A |
| D6008 | BZX79/C9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| D6009 | BZX79/C6V2 | | GEZD-6.2 | TCG5013A | SK3779/5013A | ECG5013A | TM5013A | WEP1414/5013 | 103-Z9008 | 1N5234A |
| D6010 | BZX79/C6V2 | | GEZD-6.2 | TCG5013A | SK3779/5013A | ECG5013A | TM5013A | WEP1414/5013 | 103-Z9008 | 1N5234A |
| IC6022 | TL084CN | | | | SK3594 | ECG948 | | | | |
| Q6015 | BC264D | | GE-FET-2 | TCG312+ | SK3448+ | ECG312+ | TM312+ | WEP920/312+ | 921-1067+ | 2N5459+ |
| Q6016 | BC264D | | GE-FET-2 | TCG312+ | SK3448+ | ECG312+ | TM312+ | WEP920/312+ | 921-1067+ | 2N5459+ |
| Q6017 | BC337 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q6018 | BC327 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |

# SEMICONDUCTORS (Select replacement transistor for best results) (cont)

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| **(U1704) TRICK LOGIC MODULE** | | | | | | | | | | |
| D6001 | BZX79/B5V1 | | GEZD-5.1 | TCG5010A | SK3776/5010A | ECG5010A | TM5010A | WEP1411/5010 | 103-279-10 | 1N5231A |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| IC7001 | CA311G | | | | SK3668/922M | ECG922M | | | | |
| | LM311N | | | | SK3668/922M | ECG922M | | | | |
| IC7002 | 74LS00N | | | TCG74LS00 | SK74LS00 | ECG74LS00 | | | HE-443-728 | SN74LS00N |
| IC7003 | SN74LS86N | | | TCG74LS86 | SK74LS86 | ECG74LS86 | | | HE-443-891 | SN74LS86N |
| Q7004 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7005 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7006 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7007 | BC559 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7008 | BC549 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | | | | | | | | | |
| D6001 | BZX79/C9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| D6002 | BZX75/C2V8 | | | TCG5003A | SK3769/5003A | ECG5003A | TM5003A | WEP1403/5003 | | 1N5224B |
| IC7001 | TDA2730 | | | | | | | | | |
| Q7002 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | | | | | | | | | |
| D6001 | BZX79/C8V2 | | GEZD-8.2 | TCG5016A | SK3782/5016A | ECG5016A | TM5016A | WEP1417/5016 | 103-Z9019 | 1N5237A |
| D6002 | BZX79/C9V1 | | GEZD-9.1 | TCG5018A | SK3784/5018A | ECG5018A | TM5018A | WEP1419/5018 | 103-279-18 | 1N5239A |
| IC7002 | TDA2730 | | | | | | | | | |
| Q7003 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| **(U1632) VIDEO PROCESSOR MODULE** | | | | | | | | | | |
| D6001 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6002 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6003 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| D6004 | BZX75/C2V1 | | | | | | | | | |
| D6005 | BZV38 | | | | | | | | | |
| D6006 | BAW62 | | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| Q7001 | BF494 | | GE-61+ | TCG229+ | SK3246/229 | ECG229+ | TM229+ | WEP956/229+ | 121-Z9021+ | MPSH34+ |
| Q7002 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7003 | BF198 | | GE-61 | TCG229* | SK3246/229* | ECG229* | TM229* | WEP956/229* | 121-Z9021 | MPSH34* |
| Q7004 | BSX20 | | GE-20 | TCG123A | SK3444/123A | ECG123A | TM123A | WEP736/123A | 121-Z9000A | MPSA05C |

| ITEM No. | TYPE No. | MFGR. PART No. | REPLACEMENT DATA | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | GENERAL ELECTRIC PART No. | NEW-TONE PART No. | RCA PART No. | ECG PART No. | THORDARSON PART No. | WORKMAN PART No. | ZENITH PART No. | MOTOROLA PART No. |
| Q7005 | BC558 | | GE-82+ | TCG159+ | SK3466/159+ | ECG159+ | TM159+ | WEP62/159+ | 121-Z9003+ | 2N5401+ |
| Q7006 | BSX20 | | GE-20 | TCG123A | SK3444/123A | ECG123A | TM123A | WEP736/123A | 121-Z9000A | MPSA05 |
| Q7007 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7008 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7009 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| Q7010 | BC548 | | GE-123AP+ | TCG123AP+ | SK3854/123AP+ | ECG123AP+ | TM123AP+ | WEP736/123A+ | 121-Z9000A+ | MPSA05+ |
| **VIDEO/SERVO BOARD** | | | | | | | | | | |
| D6103 | BAW62 | E30181-1 | GE-514 | TCG519 | SK3100/519 | ECG519 | TM519 | WEP925/519 | 103-131 | 1N4935 |
| Q6101 | BD331 | F10352-1 | | TCG261 | SK3896/261 | ECG261 | TM261 | | 121-Z9085 | TIP101 |
| Q6102 | BD332 | F10363-1 | | TCG262 | SK3897/262 | ECG261 | TM262 | | 121-Z9059 | TIP106 |

# For SAFETY use only equivalent replacement part.
* Lead configuration may vary from original.
+ Rotate 180° to conform with original lead configuration.

# ELECTROLYTIC CAPACITORS

| ITEM No. | RATING | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|
| | | MFGR. PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **(U1041) COLOR DETECTOR MODULE** | | | | | |
| C2012 | 1 63V | | TT150X1 | | TVA-1400 |
| C2014 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| **(U1629) DROP OUT DETECTOR MODULE** | | | | | |
| C2017 | 33 16V | | | | E1158.3 |
| **(U1035) MIRROR PHASE MODULE** | | | | | |
| C2002 | 47 25V | | | | EE1208.7 |
| C2004 | 47 25V | | | | EE1208.7 |
| C2008 | 47 25V | | | | EE1208.7 |
| C2010 | 47 25V | | | | EE1208.7 |
| C2014 | 47 25V | | | | EE1208.7 |
| C2015 | 68 16V | | | | EE1160.8 |
| C2017 | 68 16V | | | | EE1160.8 |
| **(U1691) MODE CONTROL MODULE** | | | | | |
| C21 | 22 25V | | | | EE1206.2 |
| **(U1037) MOTOR DRIVE MODULE** | | | | | |
| C2005 | 3 63V | | TT100X3 | | EE1502 |
| **POWER SUPPLY BOARD** | | | | | |
| C2 | 1 50V | 270109-1050 | VTL1S50 | QCP-3107-01 | EV-1615 |
| C6 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C7 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C8 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C9 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C10 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C11 | 10 450V | 270027-49 | TC72 | QCP-4154-01 | TVA-1705 |
| C12 | 330 50V | 270117-3250 | VTL330S50 | QCP-3181-01 | EV-1545 |
| C13 | 220 16V | 270109-2215 | VTL220S16 | QCP-3175-01 | EV-1240 |
| C16 | 47V 25V | 270109-5125 | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| C17 | 47V 25V | 270109-5125 | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| C18 | 220 16V | 270109-2215 | VTL220S16 | QCP-3175-01 | EV-1240 |
| C19 | 3300 35V | 270132-2 | | | |
| C20 | 3300 35V | 270132-2 | | | |
| **PREAMP BOARD** | | | | | |
| C2014 | 1 63V | | TC31 | | EE1327 |
| C2020 | 4.7 63V | | VTT4R70100 | | EE1330.7 |
| C2024 | 4.7 63V | | VTT4R7D100 | | EE1330.7 |
| **(U1644) RADIAL DRIVE MODULE** | | | | | |
| C2007 | 22 25V | | | | EE1206.2 |
| C2009 | 22 25V | | | | EE1206.2 |
| C2010 | 1 63V | | TC31 | | EE1327 |
| **(U1042) REFERENCE CONTROL MODULE** | | | | | |
| C2001 | 22 25V | | | | EE1206.2 |
| C2005 | .1 40V | | | | |
| C2021 | 22 25V | | | | EE1206.2 |
| C2022 | 22 25V | | | | EE1206.2 |
| C2023 | 15 40V | | TT50X15B | EV1523 | |
| **(U1628) RF PROCESSOR MODULE** | | | | | |
| C2019 | 4.7 63V | | VTT4R70100 | | E1330.7 |

# ELECTROLYTIC CAPACITORS (cont)

| ITEM No. | RATING | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|
| | | MFGR. PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **(U1637) SAMPLE DETECTOR MODULE** | | | | | |
| C2010 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| **(U1039) SEQUENCE LOGIC MODULE** | | | | | |
| C2004 | 1 50V | | TT50X1 | QCP-4106-01 | TVA-1300 |
| C2008 | 15 63V | | TT100X15 | | TVA-1338 |
| **(U1040) SLIDE DRIVE MODULE** | | | | | |
| C2002 | 33 6.3V | | VTL33S10 | QCP-3146-01 | EV-1225 |
| **(U1633) SOUND DEMODULATOR I MODULE** | | | | | |
| C2001 | 22 25V | | | | EE1206.2 |
| C2002 | 100 10V | | TC2501B | | EV1131 |
| C2015 | 1.5 3V | | | | EV1616 |
| C2017 | 33 16V | | | | E1158.3 |
| C2018 | 1 63V | | TT150X1 | | TVA-1400 |
| C2019 | 1 63V | | TT150X1 | | TVA-1400 |
| **(U1634) SOUND DEMODULATOR II MODULE** | | | | | |
| C2001 | 22 25V | | | | EE1206.2 |
| C2002 | 100 10V | | TC2501B | | EV1131 |
| C2015 | 1.5 63V | | | | EV1616 |
| C2016 | 1.5 63V | | | | EV1616 |
| C2018 | 1.5 63V | | | | EV1616 |
| C2020 | 22 25V | | | | EE1206.2 |
| C2021 | 1 63V | | TT150X1 | | TVA-1400 |
| C2022 | 1 63V | | TT150X1 | | TVA-1400 |
| **(U1038) TANGENTIAL DRIVE MODULE** | | | | | |
| C2001 | 47 25V | | | | EE1208.7 |
| C2003 | 33 16V | | | | E1158.3 |
| C2010 | 33 16V | | | | E1158.3 |
| C2011 | 68 16V | | | | E1160.8 |
| C2013 | 33 16V | | | | E1158.3 |
| C2014 | 68 16V | | | | E1160.8 |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | | | | |
| C2002 | 33 16V | | | | E1158.3 |
| C2013 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | | | | |
| C2002 | 33 16V | | | | E1158.3 |
| C2009 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| C2013 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| C2014 | 10 25V | | TT25X10 | QCP-3195-01 | TVA-1204 |
| C2017 | 33 16V | | | | E1158.3 |
| **(U1632) VIDEO PROCESSOR MODULE** | | | | | |
| C2002 | 4.7 63V | | VTT4R70100 | | EE1330.7 |
| C2005 | .1 40V | | | | |
| C2006 | 33 16V | | | | E1158.3 |
| C2013 | 33 16V | | | | E1158.3 |
| C2018 | 33 16V | | | | E1158.3 |
| **VIDEO/SERVO BOARD** | | | | | |
| C2102 | 47 20V | | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| | 47 15V | 270129-4760 | TDC476M020WLG | QCP-2142-01 | SD20-479 |
| C2103 | 47 20V | | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| | 47 15V | 270120-4760 | TDC476M020WLG | QCP-2142-01 | SD20-479 |

## ELECTROLYTIC CAPACITORS (cont)

| ITEM No. | RATING | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|
| | | MFGR. PART No. | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| C2105 | 47 20V | | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| | 45 15V | 270120-4760 | TDC476M020WLG | QCP-2142-01 | SD20-479 |
| C2106 | 47 20V | | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| | 47 15V | 270120-4760 | TDC476M020WLG | QCP-2142-01 | SD20-479 |
| C2109 | 68 63V | B70148-8689 | | | EV-1627 |
| C2110 | 68 63V | B70148-8689 | | | EV-1627 |
| C2111 | 47 20V | | VTL47S25 | QCP-3154-01 | EV-1426.1 |
| | 47 15V | 270120-4749 | TDC476M020WLG | QCP-2142-01 | SD20-479 |

## CAPACITORS

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **ANTENNA SWITCH BOX** | | | | | |
| C1 | .001 50V | | GP210 | | 10TS-D10 |
| C2 | .001 50V | | GP210 | | 10TS-D10 |
| C3 | .001 50V | | GP210 | | 10TS-D10 |
| C4 | 2.7 NPO 50V ±.25 | | GP210 | | 10TS-D10 |
| **(U1041) COLOR DETECTOR MODULE** | | | | | |
| C2001 | 100 NPO 50V | | CG0310 | | 10TCC-T10 |
| C2002 | 150 N150 50V | | | | |
| C2003 | .0027 100V | | GP227 | | 10TS-D27 |
| C2004 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2005 | 220 50V | | GP322 | | 10TS-T22 |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2008 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2013 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1629) DROP OUT DETECTOR MODULE** | | | | | |
| C2001 | 470 N150 50V | | | | |
| C2002 | .001 100V | | GP210 | | 10TS-D10 |
| C2003 | 470 100V | | GP347A | | 5GA-T47 |
| C2004 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2006 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2007 | .0047 63V | | | QC2-123 | TG-D50 |
| C2008 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2012 | .15 50V | | M192P1549R8 | | 431P1549R5 |
| C2013 | 270 N750 50V | | CG7327 | | 10TCU-T27 |
| C2014 | 10 NPO 50V | | CG0410 | | 10TCC-Q10 |
| C2015 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2016 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1643) FOCUS DRIVE MODULE** | | | | | |
| C2001 | .001 100V | | GP210 | | 10TS-D10 |
| C2002 | 10 100V | | CMC100J | | 10TCC-Q10 |
| C2003 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C2004 | .0047 63V | | | QC2-123 | TG-D50 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1035) MIRROR PHASE MODULE** | | | | | |
| C2001 | 470 63V | | GP347 | | 10TS-T47 |
| C2003 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |

# CAPACITORS (cont)

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| C2006 | 39 NPO 50V | | CG0439 | | 10TCC-Q39 |
| C2007 | .01 50V | | EWF1A110 | | 1PB-S10 |
| C2009 | .1 50V | | M192P1049R8 | | 431P1049R5 |
| C2011 | .1 50V | | M192P1049R8 | | 431P1049R5 |
| C2012 | .01 50V | | EWF1A110 | | 1PB-S10 |
| C2013 | .018 50V | | M192P1839R8 | | 192P1839R8 |
| C2016 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2018 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2019 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| **CHASSIS/SWITCH BOARD** | | | | | |
| C2171 | .001 100V | | GP210 | | 10TS-D10 |
| C2172 | .001 100V | | GP210 | | 10TS-D10 |
| **(U1691) MODE CONTROL MODULE** | | | | | |
| C1 | 470 100V | | GP347 | | 10TS-T47 |
| C2 | 470 100V | | GP347 | | 10TS-T47 |
| C3 | 470 100V | | GP347 | | 10TS-T47 |
| C4 | .0047 50V | | JE247 | | 30GA-D47 |
| C5 | .0022 50V | | JE222 | | 30GA-D22 |
| C6 | .0022 50V | | JE222 | | 30GA-D22 |
| C7 | 390 N150 50V | | | | |
| C8 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C9 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C10 | .0047 50V | | JE247 | | 30GA-D47 |
| C11 | .047 50V 10% | | | | |
| C12 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C13 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C14 | 470 100V | | GP347 | | 10TS-T47 |
| C15 | 470 100V | | GP347 | | 10TS-T47 |
| C16 | 470 100V | | GP347 | | 10TS-T47 |
| C17 | 470 100V | | GP347 | | 10TS-T47 |
| C18 | 470 100V | | GP347 | | 10TS-T47 |
| C19 | 470 100V | | GP347 | | 10TS-T47 |
| C20 | 470 100V | | GP347 | | 10TS-T47 |
| C22 | 470 100V | | GP347 | | 10TS-T47 |
| C23 | 470 100V | | GP347 | | 10TS-T47 |
| C24 | 470 100V | | GP347 | | 10TS-T47 |
| C25 | 470 100V | | GP347 | | 10TS-T47 |
| C26 | 470 100V | | GP347 | | 10TS-T47 |
| C27 | 470 100V | | GP347 | | 10TS-T47 |
| C28 | 470 100V | | GP347 | | 10TS-T47 |
| C29 | 470 100V | | GP347 | | 10TS-T47 |
| C30 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C31 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C32 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C33 | 470 100V | | GP347 | | 10TS-T47 |
| C34 | 150 50V | | GP315 | | 10TS-T15 |
| **(U1037) MOTOR DRIVE MODULE** | | | | | |
| C2001 | .056 50V | | EWF1A156 | | 1PB-S56 |
| C2002 | .0012 50V | | | | 10TS-D12 |
| C2003 | .1 50V | | M192P1049R8 | | 431P1049R5 |
| C2004 | .056 50V | | EWF1A156 | | 1PB-S56 |
| C2006 | .27 50V | | M192P2749R8 | | 192P2749R8 |
| C2008 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2010 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| **POWER SUPPLY BOARD** | | | | | |
| C3 | .01 1.4KV | | 2HV110 | | BLS-10 |
| C4 | .056 10% 250V | | | | |
| C5 | .01 10% 630V | | | | |
| C14 | .1 5% 100V | | | | |
| C15 | .1 5% 100V | | | | |
| # C21 | .01 1500V | | | | |
| | .01 1600V | B50704-2 | | | |

# CAPACITORS (cont)

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **PREAMP BOARD** | | | | | |
| C2002 | 150 N150 50V | | | | 10TCP-T15 |
| C2003 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2004 | 150 N150 50V | | | | 10TCP-T15 |
| C2005 | 1pF N075 50V | | | | |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2011 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C2012 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C2013 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2015 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2016 | 100 NPO 50V | | CG0310 | | 10TCC-T10 |
| C2017 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2018 | .0068 50V | | GP268 | QCP-5188-01 | 5GA-D68 |
| C2019 | .0027 50V | | GP227 | | 10TS-D27 |
| C2021 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2022 | 22 NPO 50V | | CG0422 | | 10TCC-Q22 |
| C2023 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1644) RADIAL DRIVE MODULE** | | | | | |
| C2002 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2003 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .15 50V | | M192P1549R8 | | 431P1549R5 |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2008 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1042) REFERENCE CONTROL MODULE** | | | | | |
| C2002 | 150 N150 50V | | | | |
| C2003 | 150 N150 50V | | | | |
| C2004 | 39 NPO 50V | | CG0439 | | 10TCC-Q39 |
| C2006 | .27 50V | | M192P2749R8 | | 192P2749R8 |
| C2008 | 10 NPO 50V | | CG410 | | 10TCC-Q10 |
| C2009 | 22 Trimmer 50V | | | | |
| C2010 | 6.8 N750 50V | | CG7568 | | 10TCU-V68 |
| C2011 | 6.8 N750 50V | | CG7568 | | 10TCU-V68 |
| C2012 | 470 63V | | GP347 | | 10TS-T47 |
| C2013 | 100 NPO 50V | | CG310 | | 10TCC-T10 |
| C2014 | 5.6 50V | | | | |
| C2017 | 150 N150 50V | | | | 10TCP-T15 |
| C2018 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2020 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1628) RF PROCESSOR MODULE** | | | | | |
| C2001 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2002 | .001 100V | | GP210 | | 10TS-D10 |
| C2003 | 12 NPO 50V | | CG0412 | | 10TCC-Q12 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2006 | 47 NPO 50V | | CG0437 | | 10TCC-Q47 |
| C2007 | 2.7 NPO 50V | | | | 10TCC-V27 |
| C2008 | 47 NPO 50V | | CG0447 | | 10TCC-Q47 |
| C2009 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2010 | 39 NPO 50V | | CG0439 | | 10TCC-Q39 |
| C2011 | 560 N150 50V | | | | |
| C2012 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2013 | 56 NPO 50V | | CG056 | | 10TCC-Q56 |
| C2014 | 3.3 NPO 50V | | CG0533 | | 10TCC-V33 |
| C2015 | 56 NPO 50V | | CG056 | | 10TCC-Q56 |
| C2016 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2017 | 100 NPO 50V | | CG310 | | 10TCC-T10 |
| C2018 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2020 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |

# CAPACITORS (cont)

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **(U1637) SAMPLE DETECTOR MODULE** | | | | | |
| C2001 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2003 | .0027 100V | | GP227 | | 10TS-D27 |
| C2004 | 82 NPO 50V | | CG0482 | | 10TCC-Q82 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | .001 50V | | EWF1A210 | | 1PB-D10 |
| C2008 | .0033 50V | | GP233 | QCP-5176-01 | 5GA-D33 |
| C2009 | .0027 100V | | GP227 | | 10TS-D27 |
| C2011 | 56 NPO 50V | | CG0456 | | 10TCC-Q56 |
| C2012 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1036) SEARCH ADAPTER MODULE** | | | | | |
| C2001 | 150 N150 50V | | | | 10TCP-T15 |
| C2002 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2003 | .033 N750 50V | | | | |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .22 50V | | EWF1A022 | | 1PB-P22 |
| C2006 | .22 50V | | EWF1A022 | | 1PB-P22 |
| C2007 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2008 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1039) SEQUENCE LOGIC MODULE** | | | | | |
| C2001 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2002 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2003 | .27 50V | | | | |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2006 | .27 50V | | | | |
| C2007 | .27 50V | | | | |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1040) SLIDE DRIVE MODULE** | | | | | |
| C2001 | .47 50V | | M192P3339R8 | | 192P3339R8 |
| C2003 | .027 50V | | M192P2739R8 | | 192P2739R8 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2006 | .0039 50V | | M192P3929R8 | | 192P3929R8 |
| **(U1633) SOUND DEMODULATOR I MODULE** | | | | | |
| C2003 | .001 50V | | GP210 | QCP-5166-01 | 5GA-D10 |
| C2004 | .027 50V | | M192P2739R8 | | 192P2739R8 |
| C2005 | 200 NPO 50V | | CMC201J | | 10TCC-T20 |
| C2006 | .0039 50V | | GP239 | | 5GA-D39 |
| C2007 | .0039 50V | | GP239 | | 5GA-D39 |
| C2008 | .001 50V | | GP210 | QCP-5166-01 | 5GA-D10 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | .0022 100V | | GP222 | | 10TS-D22 |
| C2011 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2012 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2013 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2014 | 220 50V | | | | 5GA-T22 |
| C2016 | .022 50V | | M192P2239R8 | | 192P2239R8 |
| **(U1634) SOUND DEMODULATOR II MODULE** | | | | | |
| C2003 | .001 50V | | GP210 | QCP-5166-01 | 5GA-D10 |
| C2004 | .027 50V | | PVC6127 | | 6PS-S27 |
| C2005 | 100 NPO 50V | | CMC101J | | 10TCC-T10 |
| C2006 | .0039 50V | | GP239 | | 5GA-D39 |
| C2007 | .0039 50V | | GP239 | | 5GA-D39 |
| C2008 | .001 100V | | GP210 | | 10TS-D10 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | .0022 100V | | GP222 | | 10TS-D22 |
| C2011 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2012 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2013 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |

# CAPACITORS (cont)

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| C2014 | 180 50V | | CMC181J | | 10TCC-T18 |
| C2017 | .0027 100V | | GP227 | | 5GA-D27 |
| C2019 | .022 50V | | M192P2239R8 | | 192P2239R8 |
| **(U1038) TANGENTIAL DRIVE MODULE** | | | | | |
| C2002 | .0022 50V | | JE222 | | 30GA-D22 |
| C2004 | .0022 50V | | JE222 | | 30GA-D22 |
| C2005 | .0068 50V | | JE268 | | 5GA-D68 |
| C2006 | .0047 50V | | JE247 | | 5GA-D47 |
| C2007 | 220 N470 50V | | | | 10TCT-T22 |
| C2008 | .22 50V | | M192P2249R8 | | 431P2249R5 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2012 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1704) TRICK LOGIC MODULE** | | | | | |
| C2001 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2002 | .15 50V | | M192P1549R8 | | 431P1549R5 |
| C2003 | .15 50V | | M192P1549R8 | | 431P1549R5 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .027 50V | | M192P2739R8 | | 192P2739R8 |
| C2006 | .15 50V | | M192P1549R8 | | 431P1549R5 |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | | | | |
| C2001 | .022 50V | | M192P2239R8 | | 192P2239R8 |
| C2003 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .0022 63V | | GP222 | | 10TS-D22 |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | 27 NPO 50V | | CMC270J | | 10TCC-Q27 |
| C2008 | 27 NPO 50V | | CMC270J | | 10TCC-Q27 |
| C2009 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2010 | 15 NPO 50V | | CMC150J | | 10TCC-Q15 |
| C2011 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2012 | 68 NPO 50V | | CMC680J | | 10TCC-Q68 |
| C2014 | 56 NPO 50V | | | CG0456 | |
| C2015 | 15 NPO 50V | | CMC150J | | 10TCC-Q15 |
| C2016 | 33 NPO 50V | | CMC330J | | 10TCC-Q33 |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | | | | |
| C2001 | .022 50V | | M192P2239R8 | | 192P2239R8 |
| C2003 | .01 63V | | GH103Z | QCP-5194-01 | TG-S10 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2005 | .0022 63V | | GP222 | | 10TS-D22 |
| C2006 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | 27 NPO 50V | | CMC270J | | 10TCC-Q27 |
| C2008 | 27 NPO 50V | | CMC270J | | 10TCC-Q27 |
| C2010 | 47 NPO 50V | | CMC470J | | 10TCC-Q47 |
| C2011 | 150 N105 50V | | | | |
| C2012 | 47 NPO 50V | | CMC470J | | 10TCC-Q47 |
| C2015 | 15 NPO 50V | | CMC150J | | 10TCC-Q15 |
| C2016 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| **(U1632) VIDEO PROCESSOR MODULE** | | | | | |
| C2001 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2003 | 82 NPO 50V | | CMC820J | | 10TCC-Q82 |
| C2004 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2007 | 100 NPO 50V | | CMC101J | | 10TCC-T10 |
| C2008 | 39 NPO 50V | | CMC390J | | 10TCC-Q39 |
| C2009 | 470 50V | | GP347 | | 10TS-T47 |
| C2010 | 39 NPO 50V | | CMC390J | | 10TCC-Q39 |
| C2011 | 470 50V | | GP347 | | 10TS-T47 |
| C2014 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2016 | .022 63V | | GH223Z | QCP-5217-01 | TG-S25 |
| C2017 | 8.2 NPO 50V | | | | 10TCC-V82 |

## CAPACITORS (cont)

| ITEM No. | RATING | MFGR. PART No. | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MALLORY PART No. | SPRAGUE PART No. | |
| | | | | Q-LINE | GENERAL LINE |
| **VIDEO/SERVO BOARD** | | | | | |
| C2101 | .22 250V 10% | | | | |
| C2104 | 470 250V 5% | | | | |
| C2107 | .47 100V 10% | | | | |
| C2108 | .0022 63V 5% | | | | |

# For SAFETY use only equivalent replacement part.

## CONTROLS (All wattages 1/2 watt, or less, unless listed)

| ITEM No. | FUNCTION | RESISTANCE | REPLACEMENT DATA | | |
|---|---|---|---|---|---|
| | | | MFGR. PART No. | MALLORY PART No. | TRW PART No. |
| **(U1041) COLOR DETECTOR MODULE** | | | | | |
| R3004 | Auto Disc Correction | 470 | | RVA0911V501 | X260R501B |
| **(U1629) DROP OUT DETECTOR MODULE** | | | | | |
| R3022 | Dropout | 4700 | | RVA0911V502 | X260R502B |
| **(U1643) FOCUS DRIVE MODULE** | | | | | |
| R3010 | Focus Drive | 10K | | RVA0911V103 | X260R103B |
| **(U1037) MOTOR DRIVE MODULE** | | | | | |
| R3021 | Motor Bridge Balance | 470 | | RVA0911V501 | X260R501B |
| R3028 | Motor Phase | 10K | | RVA0911V103 | X260R103B |
| **(U1644) RADIAL DRIVE MODULE** | | | | | |
| R3002 | Radial Gain | 22K | | RVA0911V253 | X260R253B |
| R3026 | Radial Limit | 2200 | | RVA0911V252 | X260R252B |
| **(U1628) RF PROCESSOR MODULE** | | | | | |
| R3002 | FM AGC | 47K | | RVA0911V503 | X260R502B |
| **(U1038) TANGENTIAL DRIVE MODULE** | | | | | |
| R3012 | Tangential Gain | 22K | | RVA0911V253 | X260R253 |
| R3038 | Tangential Gain | 100 | | | |
| **(U1704) TRICK LOGIC MODULE** | | | | | |
| R3025 | Jump Pulse | 10K | | RVA0911V103 | X260R103B |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | | | | |
| R3013 | Video I Level | 1000 | | RVA0911V102 | X260R102B |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | | | | |
| R3013 | Video II Level | 1000 | | RVA0911V102 | X260R102B |
| **(U1632) VIDEO PROCESSOR MODULE** | | | | | |
| R3029 | Black Level Clamp | 1000 | | RVA0911V102 | X260R102B |
| **CHASSIS/SWITCH BOARD** | | | | | |
| R2 | Laser Current | 470 | 220300-4712 | MTC52L4 | U201R501B |
| R3171 | Slow Motion | 100K | B20371-1 | | |

# RESISTORS (Power and Special)

| ITEM No. | RATING | REPLACEMENT DATA | | |
|---|---|---|---|---|
| | | MFGR. PART No. | SPRAGUE/ Q-LINE PART No. | WORKMAN PART No. |
| **(U1035) MIRROR PHASE MODULE** | | | | |
| R3003 | 11K 1% 1/4W Metal Oxide | | | |
| R3004 | 40.2K 1% 1/4W Metal Oxide | | | |
| **(U1037) MOTOR DRIVE MODULE** | | | | |
| R3033 | 75K 1% 1/4W Metal Oxide | | | |
| | 28.7 1% 1/4W Metal Oxide | | | |
| R3034 | 121K 1% 1/4W Metal Oxide | | | |
| | 28.7K 1% 1/4W Metal Oxide | | | |
| R3035 | 64.9K 1% 1/4W Metal Oxide | | | |
| | 68.1K 1% 1/4W Metal Oxide | | | |
| | 23.7K 1% 1/4W Metal Oxide | | | |
| R3037 | 33.2K 1% 1/4W Metal Oxide | | | |
| | 34.8K 1% 1/4W Metal Oxide | | | |
| R3038 | 28.7K 1% 1/4W Metal Oxide | | | |
| | 36.5K 1% 1/4W Metal Oxide | | | |
| R3039 | 23.7K 1% 1/4W Metal Oxide | | | |
| | 17.8K 1% 1/4W Metal Oxide | | | |
| R3040 | 249K 1% 1/4W Metal Oxide | | | |
| | 169K 1% 1/4W Metal Oxide | | | |
| R3044 | 61.9K 1% 1/4W Metal Oxide | | | |
| | 64.9K 1% 1/4W Metal Oxide | | | |
| | 28.7K 1% 1/4W Metal Oxide | | | |
| **PREAMP BOARD** | | | | |
| R3008 | 10K 1% 1/4W Metal Oxide | | | |
| R3009 | 10K 1% 1/4W Metal Oxide | | | |
| R3014 | 27.4K 1% 1/4W Metal Oxide | | | |
| R3015 | 27.4K 1% 1/4W Metal Oxide | | | |
| R3020 | 100K 1% 1/4W Metal Oxide | | | |
| R3024 | 100K 1% 1/4W Metal Oxide | | | |
| **(U1644) RADIAL DRIVE MODULE** | | | | |
| R3016 | 15K 1% 1/4W Metal Oxide | | | |
| R3019 | 15K 1% 1/4W Metal Oxide | | | |
| **(U1036) SEARCH ADAPTER MODULE** | | | | |
| R3013 | 14.7K 1% 1/4W Metal Oxide | | | |
| R3014 | 14.7K 1% 1/4W Metal Oxide | | | |
| | 33K 1% 1/4W Metal Oxide | | | |
| R3019 | 17.4K 1% 1/4W Metal Oxide | | | |
| | 27.4K 1% 1/4W Metal Oxide | | | |
| R3020 | 42.2K 1% 1/4W Metal Oxide | | | |
| | 27.4K 1% 1/4W Metal Oxide | | | |
| **(U1633) SOUND DEMODULATOR I MODULE** | | | | |
| R3008 | 27K 2% 1/4W Metal Oxide | | | |
| | 2200 2% 1/4W Metal Oxide | | | 22-3104 |
| R3009 | 560 2% 1/4W Metal Oxide | | | |
| R3012 | 560 2% 1/4W Metal Oxide | | | |
| R3013 | 4700 2% 1/4W Metal Oxide | | | |
| **(U1634) SOUND DEMODULATOR II MODULE** | | | | |
| R3008 | 2700 2% 1/4W Metal Oxide Flameproof | | | |
| R3009 | 560 2% 1/4W Metal Oxide Flameproof | | | |
| R3012 | 560 2% 1/4W Metal Oxide Flameproof | | | |
| R3013 | 4700 2% 1/4W Metal Oxide | | | |
| R3014 | 4700 2% 1/4W Metal Oxide | | | |
| **(U1704) TRICK LOGIC MODULE** | | | | |
| R3005 | 1 5% 1/4W Metal Film Flameproof | | | |
| R3008 | 1 5% 1/4W Metal Film Flameproof | | | |

## RESISTORS (Power and Special) (cont)

| ITEM No. | RATING | REPLACEMENT DATA | | |
|---|---|---|---|---|
| | | MFGR. PART No. | SPRAGUE/ Q-LINE PART No. | WORKMAN PART No. |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | | | |
| R3001 | 3300 2% 1/4W Metal Oxide | | | |
| R3003 | 150 2% 1/4W Metal Oxide | | | |
| R3006 | 4700 2% 1/4W Metal Oxide | | | |
| R3007 | 4700 2% 1/4W Metal Oxide | | | |
| R3008 | 3300 2% 1/4W Metal Oxide | | | |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | | | |
| R3001 | 1100 2% 1/4W Metal Oxide | | | |
| R3004 | 330 2% 1/4W Metal Oxide | | | |
| R3005 | 330 2% 1/4W Metal Oxide | | | |
| R3008 | 4700 2% 1/4W Metal Oxide | | | |
| R3009 | 4700 2% 1/4W Metal Oxide | | | |

## COILS (RF-IF)

| ITEM No. | FUNCTION | MFGR. PART No. |
|---|---|---|
| **ANTENNA SWITCH BOX** | | |
| L1 | RF Choke (5.6uH) | |
| **(U1041) COLOR DETECTOR MODULE** | | |
| L5001 | Band Pass | |
| **(U1629) DROP OUT DETECTOR MODULE** | | |
| L5001 | Peaking (10uH) | |
| L5002 | RF Choke (1.2uH) | |
| L5003 | Peaking (600uH) | |
| **(U1691) MODE CONTROL MODULE** | | |
| S1 | Peaking (3.5uH) | |
| S2 | Peaking (230uH) | |
| **(U1628) RF PROCESSOR MODULE** | | |
| L5001 | Peaking (4.1uH) | |
| L5002 | Peaking (4.5uH) | |
| L5003 | Peaking (5.8uH) | |
| L5004 | Peaking (60uH) | |
| **(U1633) SOUND DEMODULATOR I MODULE** | | |
| L5001 | Peaking (473uH) | |
| L5002 | Peaking (22uH) | |
| L5003 | Peaking (182uH) | |

| ITEM No. | FUNCTION | MFGR. PART No. |
|---|---|---|
| **(U1634) SOUND DEMODULATOR II MODULE** | | |
| L5001 | Peaking (473uH) | |
| L5002 | Peaking (22uH) | |
| L5003 | Peaking (182uH) | |
| **(U1630) VIDEO DEMODULATOR I MODULE** | | |
| L5001 | Peaking (3.3uH) | |
| L5002 | Peaking (3.3uH) | |
| L5003 | Peaking (3.3uH) | |
| L5004 | Peaking (3.3uH) | |
| L5005 | Peaking (20uH) | |
| L5006 | RF Choke (32uH) | |
| L5007 | Peaking (52uH) | |
| L5008 | RF Choke (32uH) | |
| L5009 | Peaking (32uH) | |
| **(U1631) VIDEO DEMODULATOR II MODULE** | | |
| L5001 | RF Choke (5uH) | |
| L5002 | Peaking (3.3uH) | |
| L5003 | Peaking (3.3uH) | |
| L5004 | Peaking (3.3uH) | |
| L5005 | Peaking (3.3uH) | |
| L5006 | Peaking (82uH) | |
| L5007 | Peaking (82uH) | |
| L5008 | Peaking (32uH) | |
| **(U1632) VIDEO PROCESSOR MODULE** | | |
| L5001 | Peaking (100uH) | |
| L5002 | Peaking (64uH) | |
| L5003 | Peaking | |
| L5004 | Peaking | |

## TRANSFORMER (Power)

| ITEM No. | RATING | | | REPLACEMENT DATA | | |
|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | MFGR. PART No. | THORDARSON PART No. | TRIAD PART No. |
| **CHASSIS/SWITCH BOARD** | | | | | | |
| # T1 | 120V AC @ .73A AC | 892V AC @ 6mA DC | 39.2V AC CT @ 3A DC | 703780-1<br>300343-1002(1) | | |

# For SAFETY use only equivalent replacement part.
(1) Number on unit.

## TRANSFORMER

| ITEM No. | FUNCTION | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|
| | | MFGR. PART No. | OTHER IDENTIFICATION | THORDARSON PART No. | TRIAD PART No. |
| **CHASSIS/SWITCH BOARD** | | | | | |
| # T2 | Laser Start-Up | C61668-1<br>(361668-1)(1) | | | |

# For SAFETY use only equivalent replacement part.
(1) Number on unit.

## FUSE DEVICES

| ITEM No. | DESCRIPTION | REPLACEMENT DATA | | | | NOTES |
|---|---|---|---|---|---|---|
| | | MFGR. PART No. | | BUSS PART No. | | |
| | | DEVICE | HOLDER | DEVICE | HOLDER | |
| **CHASSIS/SWITCH BOARD** | | | | | | |
| # F1 | 1.5A @ 125V Slow-Blow | 181021-5150 | 181007-1 | MDL 1-1/2 | | #For SAFETY use only equivalent replacement part. |

## MISCELLANEOUS

| ITEM No. | PART NAME | MFGR. PART No. | NOTES |
|---|---|---|---|
| **ANTENNA SWITCH BOX** | | | |
| J1 | Jack | 180902-4 | RF Input |
| K1 | Relay | 160578-1 | Reed Switch (Antenna Switching) |
| | Antenna Switch Box | 703787-2 | Complete Assembly |
| **(U1643) FOCUS DRIVE MODULE** | | | |
| VR0012 | Varistor | | |
| **LED BOARD** | | | |
| A01 | Connector Housing | 181227-7 | 7 Pin |
| | Contact | 181011-3 | Used with A01 |
| D6151 | LED | E30160-4 | Power (Red) |
| D6152 | LED | E30160-4 | Audio Channel 1 (Red) |
| D6153 | LED | E30160-4 | Still Picture (Red) |
| D6154 | LED | E30160-4 | Slow Motion (Red) |
| D6155 | LED | E30160-4 | Play (Red) |
| D6156 | LED | E30160-4 | Audio Channel 2 (Red) |
| P7 | Connector Housing | 181210-1003 | 3 Pin |
| | Contact | 181011-3 | Used with P7 |

# MISCELLANEOUS (cont)

| ITEM No. | PART NAME | MFGR. PART No. | NOTES |
|---|---|---|---|
| | **(U1037) MOTOR DRIVE MODULE** | | |
| VR3037 | Thermistor | | |
| | **POWER SUPPLY BOARD** | | |
| J5 | Connector | 181246-1 | 3 Pin |
| | **(U1042) REFERENCE CONTROL MODULE** | | |
| X5001 | Crystal | | 4.531468MHz |
| | **(U1038) TANGENTIAL DRIVE MODULE** | | |
| VR3037 | Varistor | | |
| | **VIDEO/SERVO BOARD** | | |
| DL5101 | Delay Line | C61660-1 | 64uSec |
| DL5102 | Delay Line | C61659-1 | 140nSec |
| DL5103 | Delay Line | C61581-1 | 540nSec |
| FB1 | Ferrite Bead | A44092-1 | |
| SKA3/A4 | Switch | 150438-2 | Channel 3/4 Select |
| | VHF Modulator | 703786-1 | |
| | **CHASSIS/SWITCH BOARD** | | |
| A02 | Connector Housing | 181227-9 | 9 Pin |
| A03 | Connector Housing | 181227-5 | 5 Pin |
| | Contacts | 181011-3 | Used with A02, A03 |
| A04 | Connector Housing | 181227-4 | 4 Pin |
| A05 | Connector Housing | 181227-3 | 3 Pin |
| A06 | Connector Housing | 181227-3 | 3 Pin |
| A07 | Connector Housing | 181227-4 | 4 Pin |
| A08 | Connector Housing | 181227-3 | 3 Pin |
| A09 | Connector Housing | 181227-4 | 4 Pin |
| A10 | Connector Housing | 181227-7 | 7 Pin |
| A11 | Connector Housing | 181227-8 | 8 Pin |
| A13 | Connector Housing | 181227-3 | 3 Pin |
| A14 | Connector Housing | 181227-4 | 4 Pin |
| A25 | Connector Housing | 181227-3 | 3 Pin |
| A26 | Connector Housing | 181227-7 | 7 Pin |
| A31 | Connector Housing | 181227-5 | 5 Pin |
| A32 | Connector Housing | 181227-5 | 5 Pin |
| A33 | Connector Housing | 181227-3 | 3 Pin |
| A34 | Connector Housing | 181227-3 | 3 Pin |
| FB1 | Ferrite Bead | | |
| FB2 | Ferrite Bead | | |
| J1 | Jack | 180875-2 | Aux Video Output |
| J2 | Jack | 181239-1 | RF TV Signal Output |
| J3 | Jack | 180813-1 | Aux Audio Output Left |
| J4 | Jack | 180813-1 | Aux Audio Output Right |
| L1 | Coil | | Tangential Mirror, Part of Laser Slide Assembly Part Number 702573-1 |
| L2 | Coil | | Focus Objective, Part of Laser Slide Assembly Part Number 702573-1 |
| L3 | Coil | | Radial Mirror, Part of Laser Slide Assembly Part Number 702573-1 |
| M1 | Motor | 702575-1 | Turntable |
| M2 | Motor | E00246-2 | Slide Drive |
| P1 | Connector Housing | 181210-1002 | 2 Pin |
| P2 | Connector Housing | 181210-7 | 7 Pin |
| P3 | Connector Housing | 181210-4 | 4 Pin |
| P4 | Connector Housing | 181210-1008 | 8 Pin |
| P5 | Male Housing | 181244-2 | 5 Pin |
| | Female Contact | 180725-1 | Used with P5 (2 used) |
| | Male Contact | 180726-1 | Used with P5 |
| P6 | Connector Housing | 181210-1003 | 3 Pin |
| P7 | Connector Housing | 181210-1003 | 3 Pin |
| P8 | Connector Housing | 181210-3 | 3 Pin |
| | Contacts | 181011-1 | Used with all Connector Housings, Except P5 |

## MISCELLANEOUS (cont)

| ITEM No. | PART NAME | MFGR. PART No. | NOTES |
|---|---|---|---|
| # P100 | Cord | 461266-1 | AC Power |
| # SK1 | Switch | A60581-1 | Power On/Off |
| SK2 | Switch | 160579-1 | Still, Reverse |
| SK3 | Switch | 160579-1 | Still, Forward |
| SK4 | Switch | 160579-1 | Slow Motion, Reverse |
| SK5 | Switch | 160579-1 | Slow Motion, Forward |
| SK6 | Switch | 160579-1 | Play, Reverse |
| SK7 | Switch | 160579-1 | Play, Normal |
| SK8 | Switch | 160579-1 | Fast Forward |
| SK9 | Switch | 160579-1 | Audio, Channel 1 |
| SK10 | Switch | 160579-1 | Audio, Channel 2 |
| SK11 | Switch | 160579-1 | Search, Reverse |
| SK12 | Switch | 160579-1 | Search, Forward |
| SK13 | Switch | 160579-1 | Index |
| SK14A | Switch | A60623-1 | Lid |
| SK14B | Switch | A60623-1 | Lid |
| SK16A | Switch | A60589-1 | Tangential |
| SK16B | Switch | A60589-1 | Tangential |
| SL1 | Solenoid | 702571-1 | Lid Lock |
| # V1 | Laser | | Part of Laser Slide Assembly, Part No. 702573-1 |
| # | Laser Slide Assembly | 702573-1 | |
| | Output Cable | 461267-2 | 75 ohm, with Connectors |
| | P.C. Board | 703980-1 | Preamp (Complete) |

# For SAFETY use only equivalent replacement part.

## MODULES (PLUG-IN BOARDS)

| ITEM No. | PART NAME | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|
| | | MFGR. PART No. | PTS PART No. | |
| | Color Detector | 703991-1 | | |
| | Drop Out Detector | 703798-1 | | |
| | Focus Drive | 703993-1 | | |
| | Mirror Phase | 703995-1 | | |
| | Mode Control | 703797-1 | | |
| | Motor Drive | 703997-2 | | Late Production |
| | | 703997-1 | | Early Production |
| | Radial Drive | 703994-1 | | |
| | Reference Control | 703992-1 | | |
| | RF Processor | 703981-1 | | |
| | Sample Detector | 703988-1 | | |
| | Search Adaptor | 703996-1 | | |
| | Sequence Logic | 703999-1 | | |
| | Slide Drive | 703990-1 | | |
| | Sound Demodulator I | 703986-1 | | |
| | Sound Demodulator II | 703987-1 | | |
| | Tangential Drive | 703998-2 | | Late Production |
| | | 703998-1 | | Early Production |
| | Trick Logic | 703989-1 | | |
| | Video Demodulator I | 703983-1 | | |
| | Video Demodulator II | 703984-1 | | |
| | Video Processor | 703985-1 | | |

## CABINETS & CABINET PARTS (When ordering specify model, chassis & color)

| ITEM | PART No. |
|---|---|
| Cabinet Top | 143910-1 |
| Lid Assembly | 702569-1 |
| Lid, without Hardware or Ornamental Disc | 143917-2(1) |
| Flat Detent Spring | 103302-1(1) |
| Hinge Block, Left | 143920-1(1) |
| Hinge Block, Right | 143921-1(1) |
| Hinge Pin (2 Used) | 110681-1(1) |
| Latching Block | 143918-1(1) |
| Ornamental Disc | 151489-1(1) |
| Bottom Panel | 143895-1 |
| Control Panel | 702629-1 |
| Lid Open Panel | 143892-1 |
| Top Panel, Left | 143893-1 |
| Top Panel, Right | 143894-1 |

| ITEM | PART No. |
|---|---|
| Cover, Objective Lens Assembly | 143907-1 |
| Sliding Slot Cover (Large) | 144081-1 |
| Sliding Slot cover (Small) | 144080-1 |
| Ornamental Ring | 144294-1 |
| Turntable Ring Assembly | 702568-2 |
| Centering Ring | 144295-1(2) |
| O Ring | 103425-1(2) |
| Turntable Ring | 110702-1(2) |
| Button, Function (Black) (11 Used) | 143911-1 |
| Button, Function (Chrome) (2 Used) | 143912-1<br>143912-1 |
| Knob, Lid Open | 733217-1 |
| Knob, Slow Motion | 143915-1 |

(1) Part of Lid Assembly, Part Number 702569-1.
(2) Part of Turntable Ring Assembly, Part Number 702568-2.

## WIRING DATA

| | |
|---|---|
| Shielded Hook-up Wire ..... | Use BELDEN No. 8401 or 8421 (Single-Conductor)<br>8208 (Two-Conductor) |
| General-use Unshielded Hook-up Wire ..... | Use BELDEN No. 8528 (Solid) Available in 13 Colors<br>8522 (Stranded) Available in 13 Colors |
| 75-Ohm Lead ..... | Use BELDEN No. 8241 |